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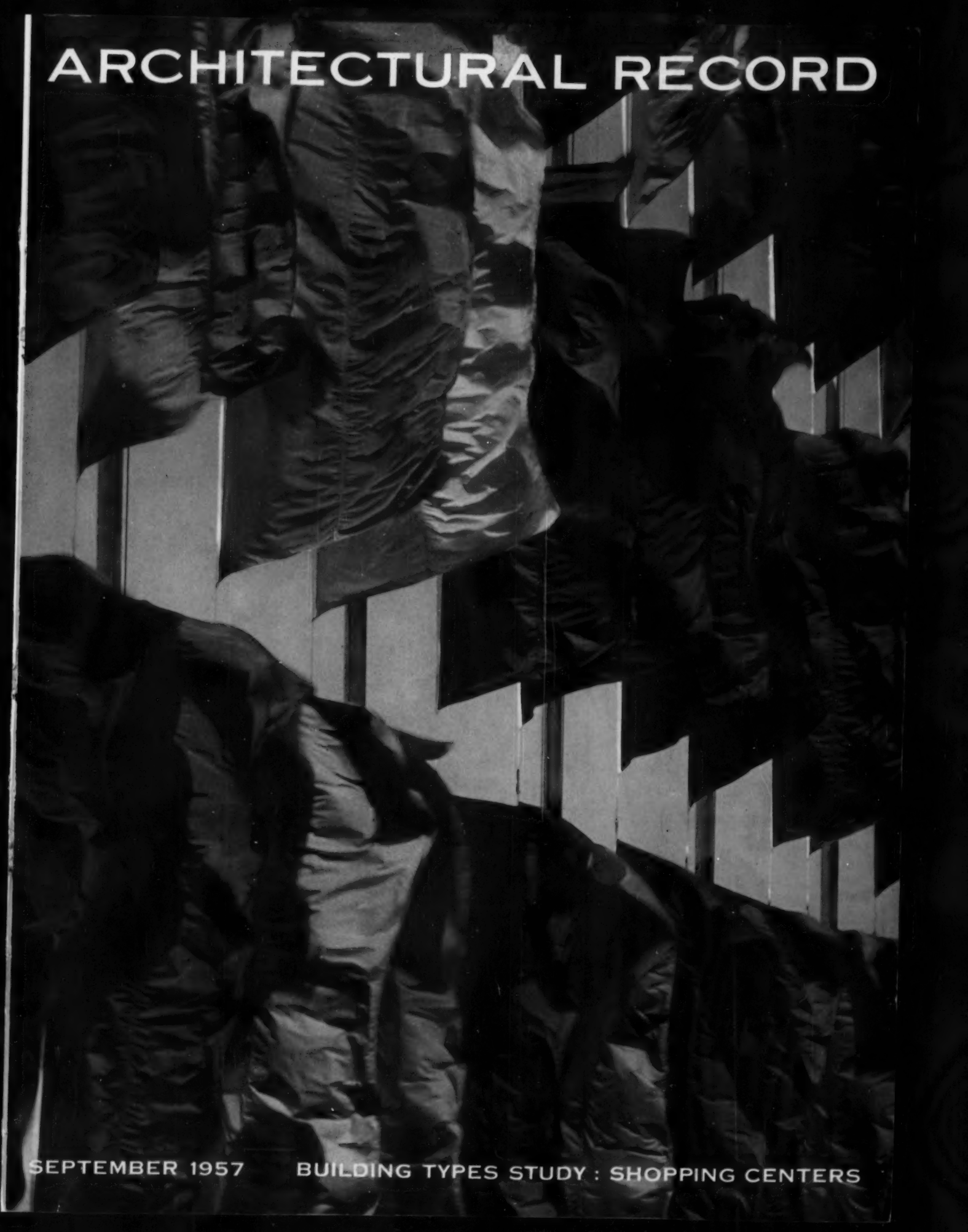

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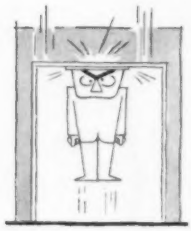

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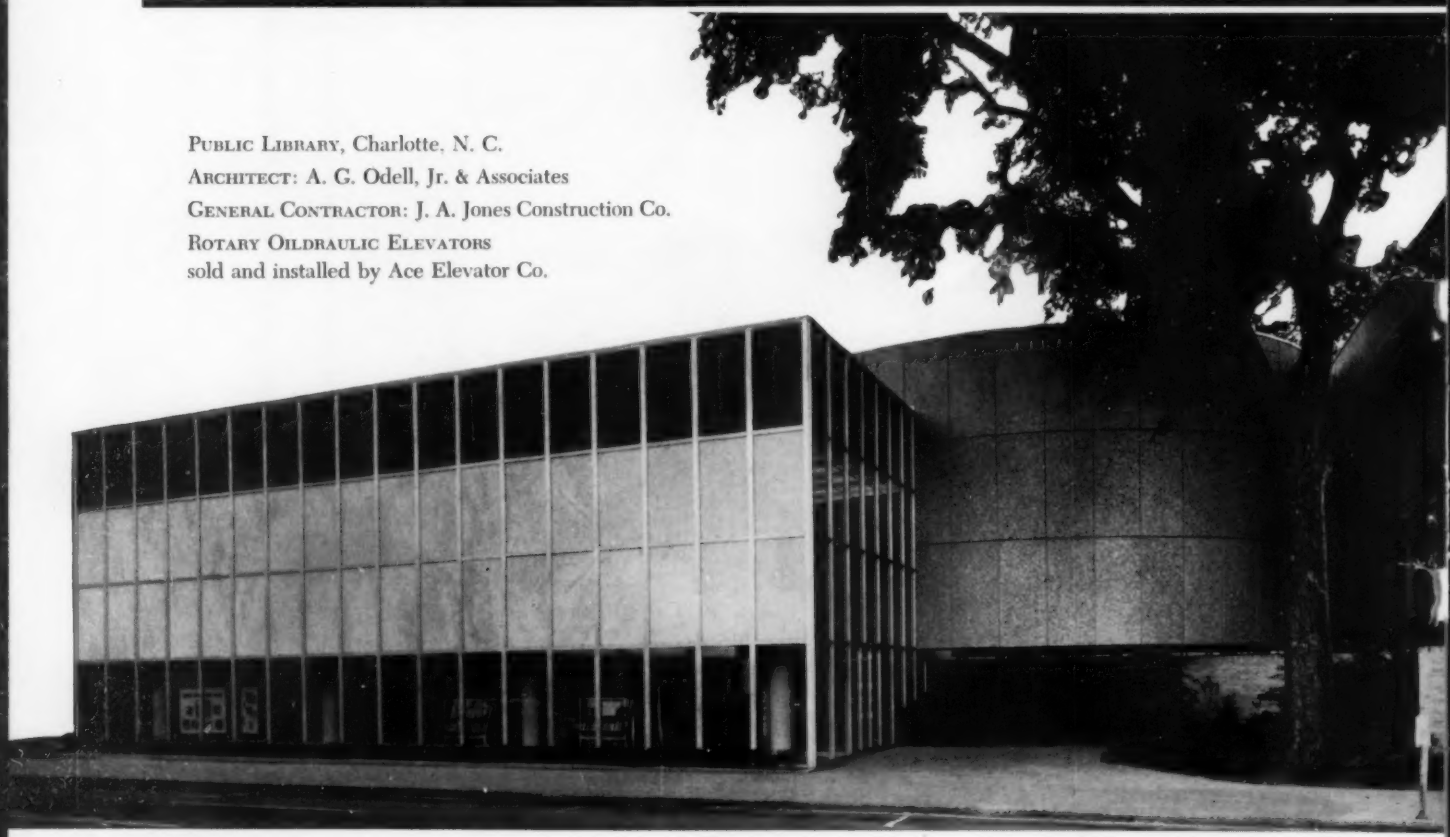

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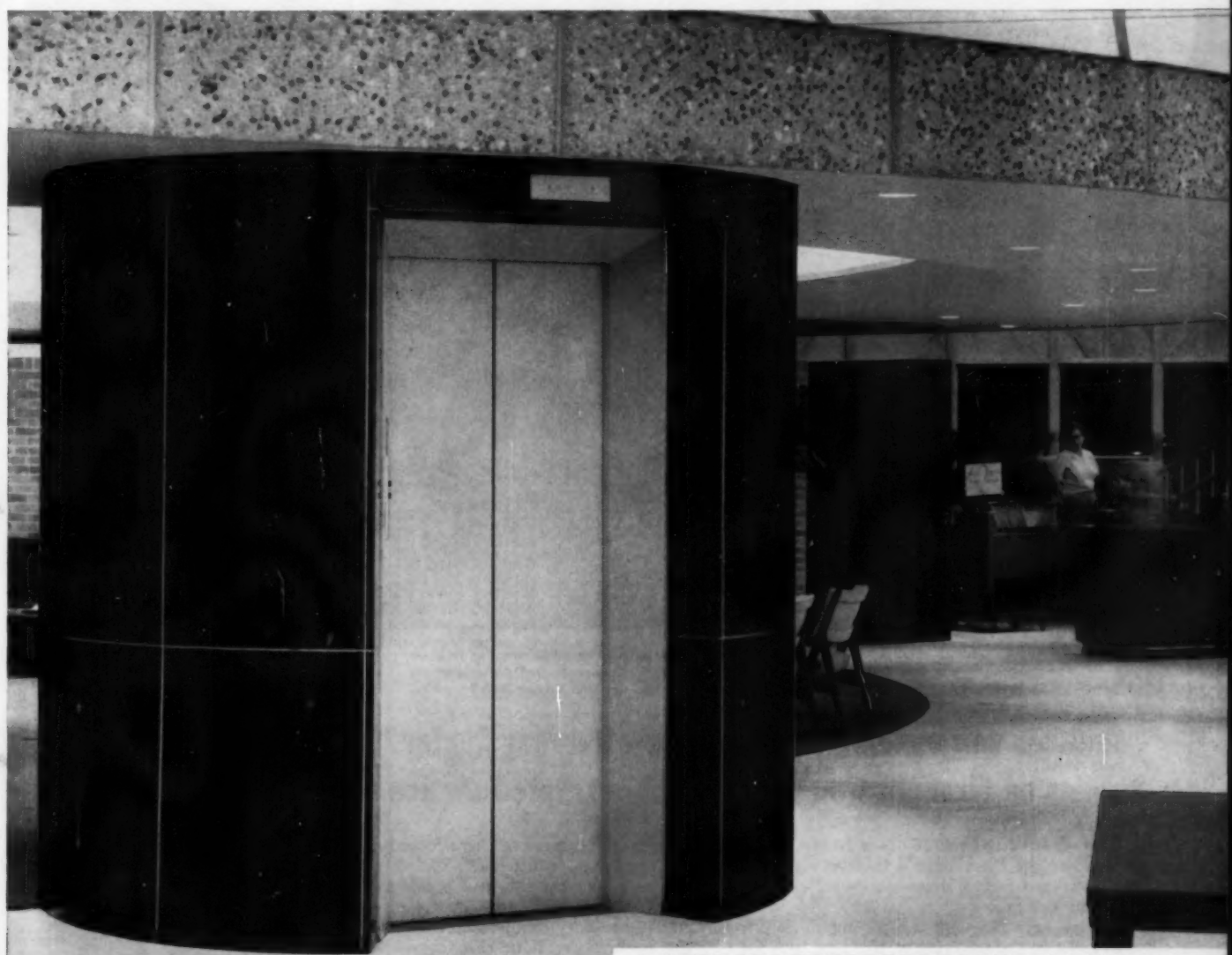

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September 1957 Vol. 122 No. 3

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A consciously starry-eyed school design to look over the idea that an elementary school might look inward toward itself and its children, not outward toward community center functions. At any rate it presents some delightful ideas, spaces, courtyards and concepts for the stimulation of children.

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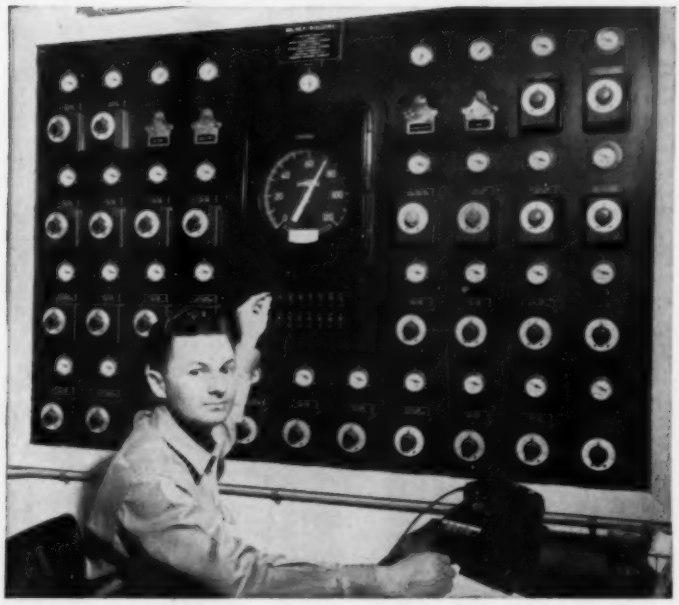

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Milner Office Building and Annex, Jackson, Mississippi. E. L. Malvaney, architect; W. H. Lambeth, consulting engineer; Davis Plumbing Company, mechanical contractor, main building; Central Plumbing and Heating Company, mechanical contractor, annex; all of Jackson, Mississippi.

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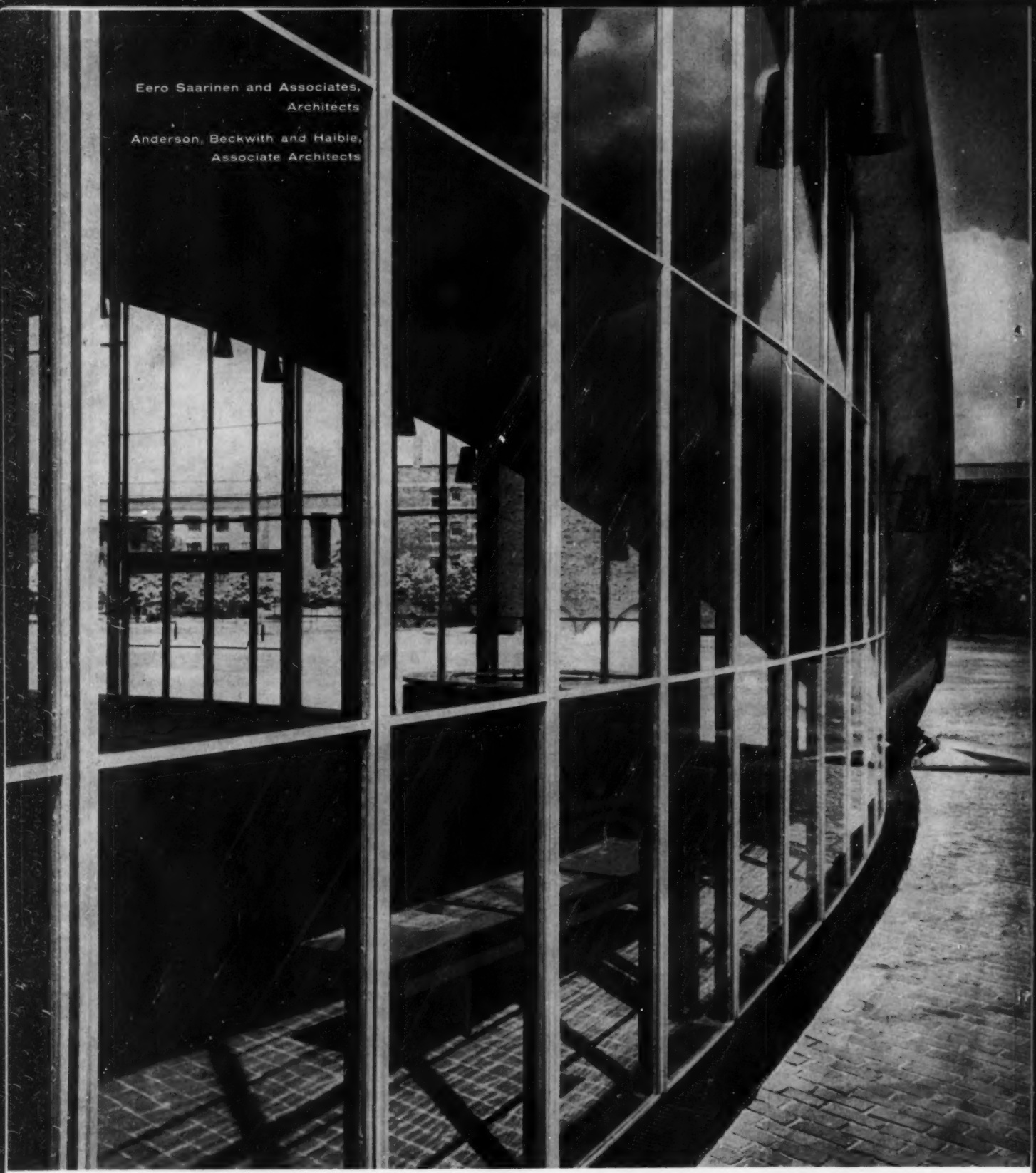

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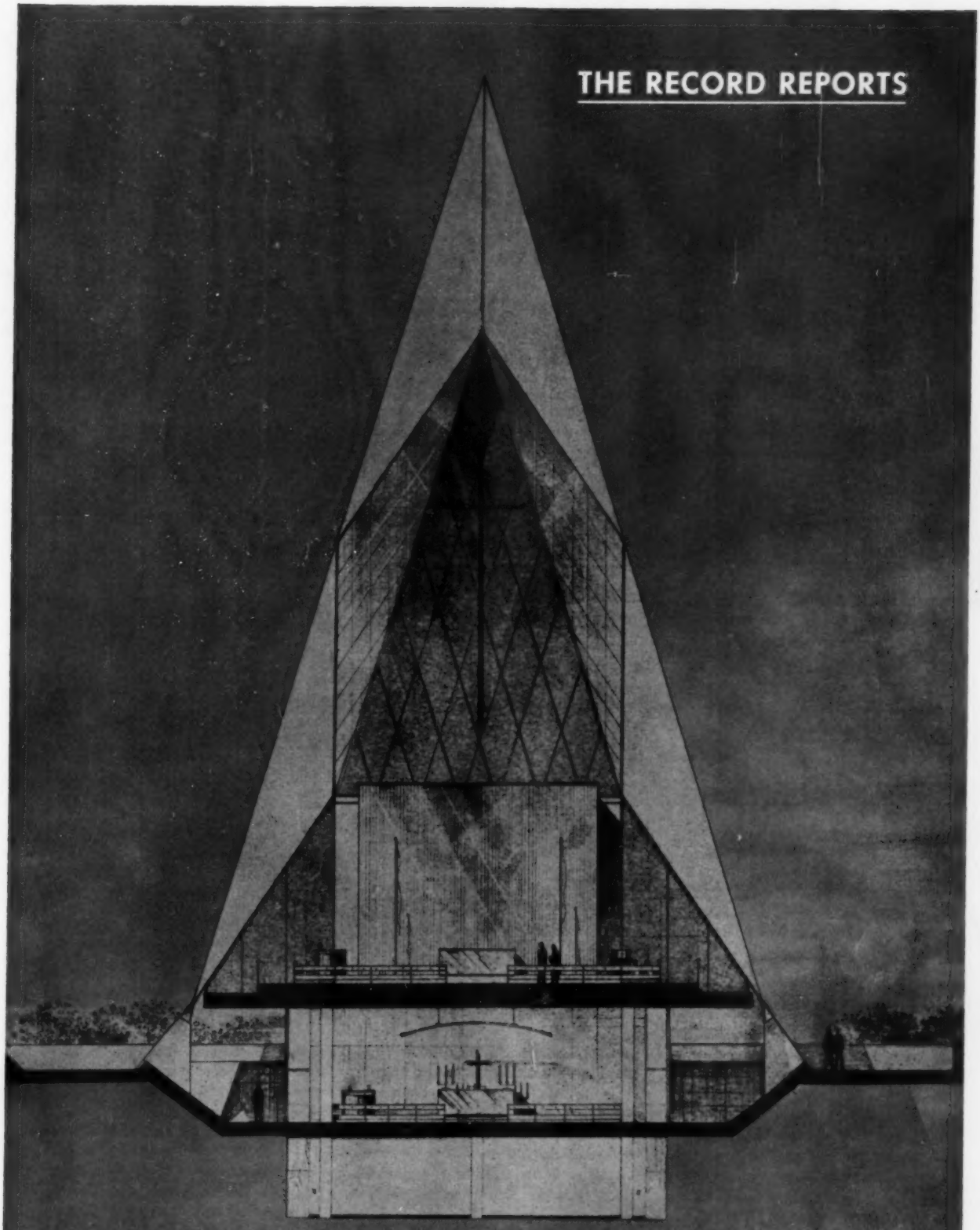
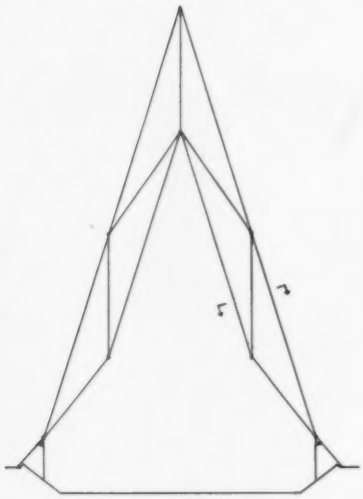
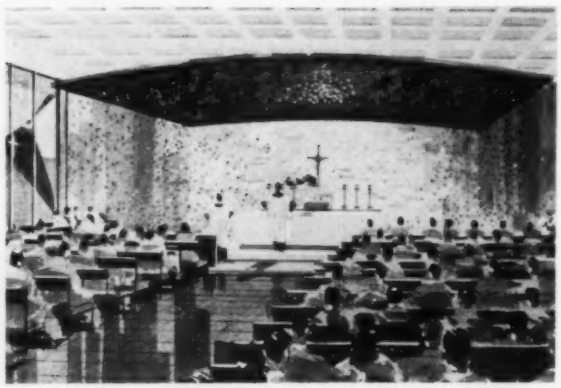


AIR ACADEMY CHAPEL: NEW DESIGN, OLD CONTROVERSY



Protestant Chapel interior (above), envisioned as lofty space infused with light reflected through colored glass panels on folded surfaces of tetrahedrons. Lowest areas under sloping walls will be reserved for Air Force memorials

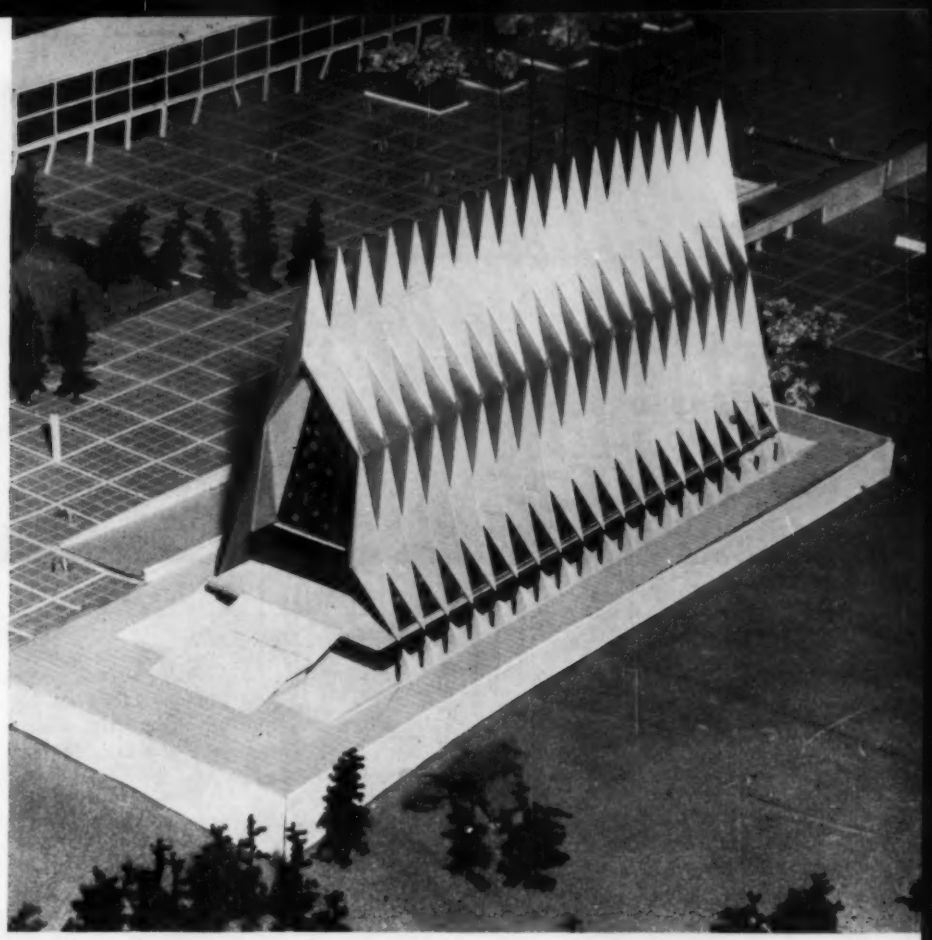


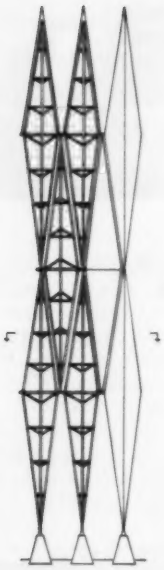
Catholic Chapel interior (right) in rendering made before diamond pattern was established for coffering of prestressed concrete ceiling. Glass side walls look on granite abutments from which tetrahedrons spring, trees and sky beyond

The new design concept for the much-discussed chapel of the United States Air Force Academy (Skidmore, Owings and Merrill, Architects) was unveiled last month for purposes of the Congressional debate on the $3 million sought for its construction. In the House of Representatives, whose "debate" provided as depressing a spectacle of uninformed public discussion of public architecture as the infamous sessions on Academy design two years ago, the appropriation was at first refused and then restored — mainly on the plea that otherwise the Academy would open next fall with no chapel at all. The Senate approved the appropriation without debate. The design the architectural Don Quixotes of the House tilted away at as "a monstrosity," "a rectangular accordion stretched out on the floor" and "a row of polished tepees" has the enthusiastic approval of the Air Force itself and of its consulting architects, Pietro Belluschi, Eero Saarinen, Welton Becket and Roy Larson.

The basic program for the chapel called for a Protestant Chapel seating 900, a Catholic Chapel seating 500 and a Jewish Chapel seating 100. The solution as the architects evolved it was to enclose all three faiths in a single simple structural envelope while imparting its own distinctive character to each of the separate chapels within. The esthetic effort was toward a form, expressed by today's methods in today's materials, which would provide a quality of space, light and structure achieved — with the materials and methods of their times — by the great church builders of the past, most notably, of course, in the Gothic.

The structure is a space frame of tetrahedrons, to be made of steel or aluminum pipe sections and enclosed with





Closeup of Chapel model with Administration Building (not designed with crooked columns) visible beyond Court of Honor in background. Ramp for cadet access is partly visible to left of Chapel; podium provides public outlook for Cadet Academic Area

Jewish Chapel (left), which shares lower level with Catholic, is circular, with enclosure of vertical grillage and clear glass inserts opening to the foyer. There is terrace access from both the Catholic and the Jewish Chapels

aluminum panels, filled in with colored glass and supported on hinges by granite abutments set in a sloping wall of granite pavers, the whole resting on a granite podium. It rises 136 ft from hinge to pinnacle, has an overall length of 280 ft and in width is 84 ft from hinge to hinge. Bay width reaches 14 ft.

Within, the three chapels are disposed on two levels (see page 9), with the Protestant Chapel on the upper level and the Catholic and Jewish Chapels below.

The fusion of light and structure resulting from the reflection of light through the colored glass panels on the folded surfaces of the tetrahedrons is "the main expression and articulation" of the Protestant Chapel, which will have a nave 64 ft by 168 ft, reaching a height of 94 ft. The large windows at either end will have light transmission gaged to avoid conflict with the light diffusing patterns following the tetrahedrons.

The Catholic Chapel, with a nave 56 ft wide, 113 ft long and 19 ft high, will be essentially horizontal in character, with a prestressed concrete ceiling coffered in a diamond pattern to recall the tetrahedron shape. This pattern, as it meets the side walls, establishes a rhythm of two spacings for the mullions, the narrower one providing the location for the Stations of the Cross. Important to the character of the chapel will be the view through its tinted glass side walls of the granite abutments springing from their sloping wall of granite pavers, and of sky and trees beyond.

The Jewish Chapel is circular in shape, with a diameter of 42 ft and a height of 19 ft. It is enclosed by a vertical grillage with inserts of clear glass opening to the foyer.

AIR ACADEMY CHAPEL

Above: Architectural concepts of Chapel, Administration Building and Social Hall as first made public two years ago. Below: Models reflecting current concepts of Cadet Quarters (foreground), Chapel and Administration Building

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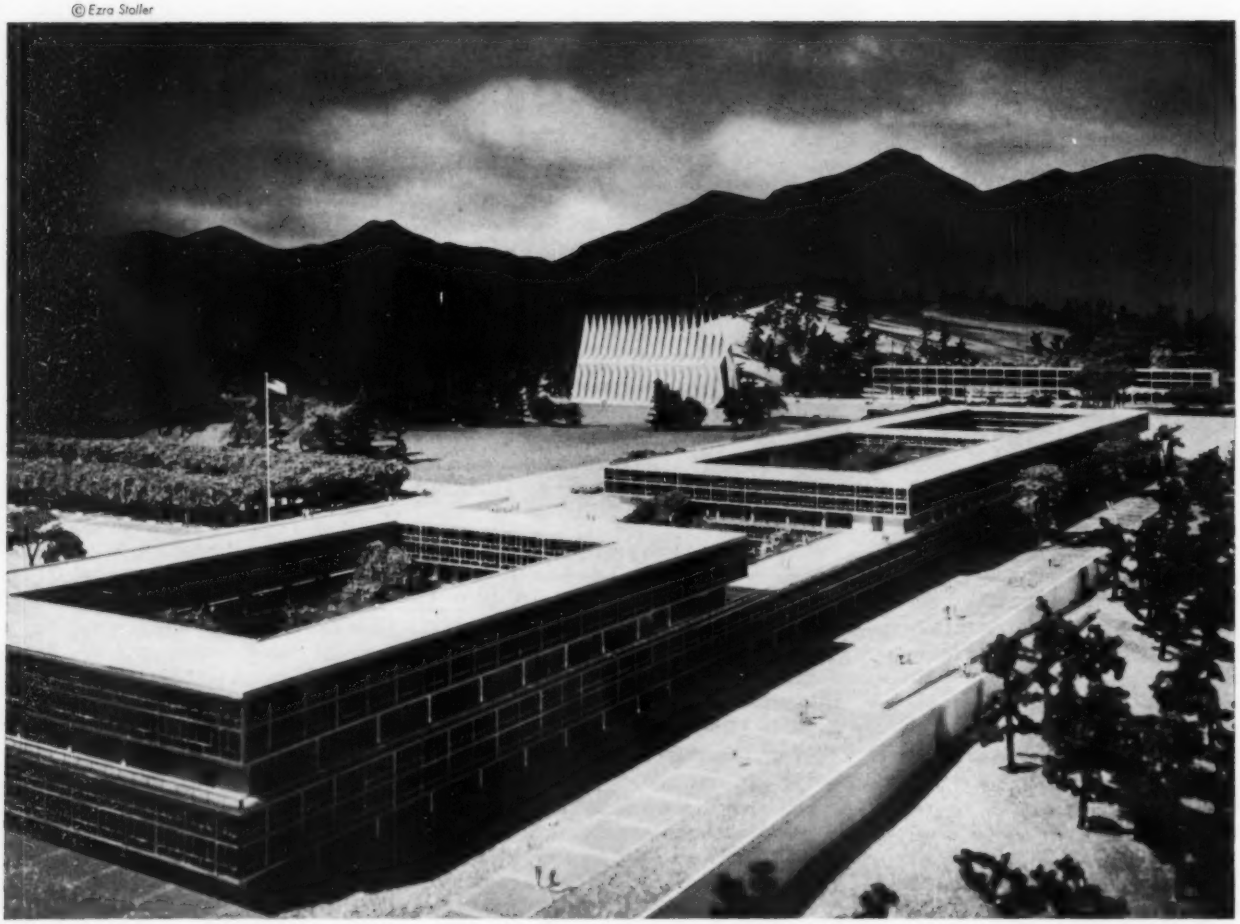

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architect: Thorshov and Cerny, Inc., Architects and Engineers

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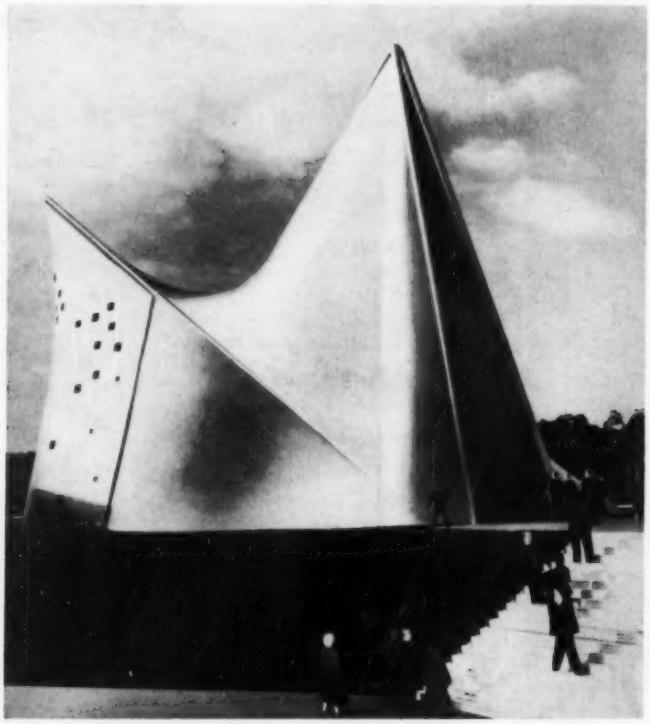
The Armstrong Cork Company makes all types of resilient floors. Therefore, unbiased recommendations can be made for every flooring need. For product and technical information, flooring samples, complete specifications, design and color scheme assistance, call the Architectural-Builder Consultant in your nearest Armstrong District Office or write direct to Armstrong Cork Company, Floor Division, 709 Rock Street, Lancaster, Pennsylvania.

Armstrong FLOORS

Approximate Installed Prices per Sq. Ft. (Over concrete, minimum area 1000 sq. ft.)

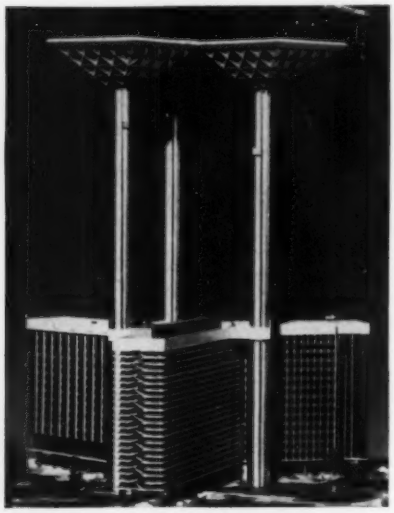
20¢ to 35¢	Decoray® Linoleum Tile Asphalt Tile, 1/8" (A, B, C, D) Linoleum, light gauge Asphalt Tile, 3/16" (A, B)	35¢ to 45¢	Linoleum, standard gauge Asphalt Tile, 3/16" (C, D) Linoleum, 1/8" ("Battleship") Greaseproof Asphalt Tile Cork Tile, 3/32"	45¢ to 60¢	Corlon® (Sheet Vinyl) Linoleum, 1/8" Cork Tile, 1/8" Excelon® Tile (Vinyl-Asbestos) 1/8"	60¢ to 70¢	Rubber Tile, 1/8" Cork Tile, 3/16" Linotile® Corlon (Hydrocord® Back) Linoleum (Cushion-Eze® Back**)	70¢ to 90¢	Custom Corlon Tile (Homogeneous Vinyl) 3/32", 1/8" Cork Tile, 5/16" Rubber Tile, 3/16" Corlon (Cushion-Eze Back)	$1.35 to $1.38	Custom Vinyl Cork Tile Imperial® Custom Corlon Tile

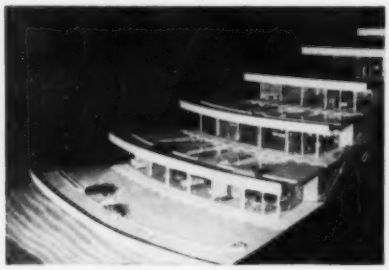
**PATENT PENDING



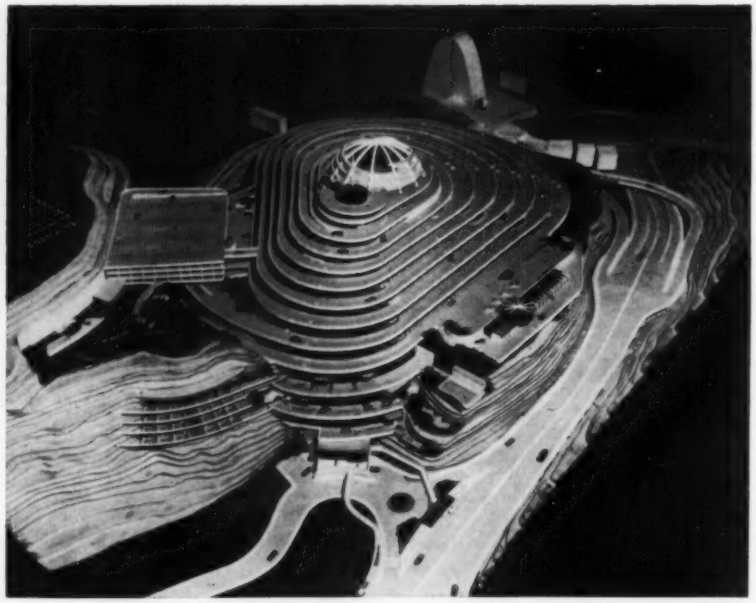
CORBU AT BRUSSELS — Philips Pavilion for Brussels World's Fair 1958, to house demonstrations being developed for the Belgian electronics firm of "light and sound integrally combined," has been designed by Le Corbusier as an architectural system of two inclined surfaces, with the highest point about 66 ft above grade and a volume of 141,600 cu ft from a surface area of 5380 sq ft; there are no supplementary columns. Surfaces consist of 2000 concrete panels less than two in. thick and of different shapes, each covering an area of about 10.76 sq ft; they are held together with steel wires less than three tenths of an inch thick

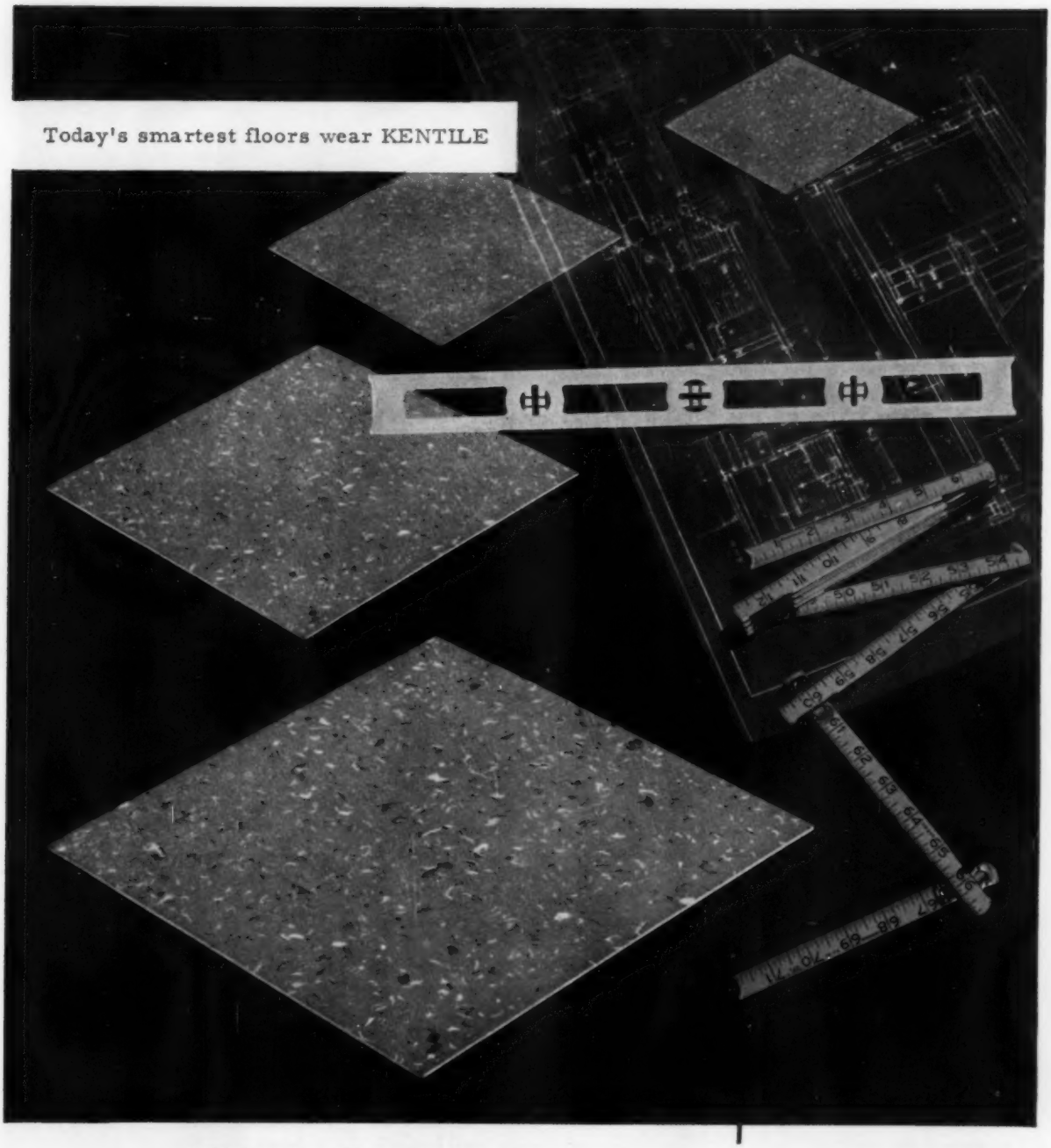
SKYPORT FOR LONDON — This is "Skyport One," designed by architect James Dartford as a project of the Glass Age Development Committee of Pilkington Brothers Ltd., which describes it as "an example of the city-center air station which will be needed in the year 2000." The proposal is a 500-ft-high landing deck designed as a "triple turn-around" air stop and supported by three shafts each consisting of a finned structural drum encased in an outer cylinder of glass and housing elevators serving the landing deck. The shafts straddle a 200-ft-high triple-wing building. Landing deck consists of three pentagonal landing and take-off pads each about 120 ft in diameter. Scheme assumes vertical takeoffs and landings





BUSINESS CENTER FOR CARACAS — Under construction on a mountain overlooking Caracas is the "Helicoid," a $25 million business and commercial center designed by Venezuelan architect Jorge Romero Gutierrez. Facilities include 320 small stores, industrial showrooms, hotel, swimming pool, garages, business offices and — in the dome — a "Great Hall" for international trade fairs. The building, 365 ft high, is "contoured" to the side of the hill: 10 stories high on one side and 25 on the other; its base will cover 25 acres





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SIZE: 9" x 9"

THICKNESSES:
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COLORS:
Regular -- 8
DeLuxe -- 7
Decorator -- 7

THE RECORD REPORTS: NEWS OF ARCHITECTURE ABROAD

This is an account, presented exactly as received, of the organization of architecture and construction in the Soviet Union today. It was written at the request of the RECORD by Alexander Vlasov, now vice president of the Academy of Construction and Architecture of the U.S.S.R., whom American architects will remember as the architect member of a Soviet delegation which visited the U.S.A. in the fall of 1955 at the invitation of the National Association of Home Builders (AR, Nov. 1955, page 48). It is the first published report by a U.S.S.R. architect of the organization of the building industry in the Soviet Union which followed the much-publicized "reorganization" in that field. The accompanying photographs were selected by Mr. Vlasov in response to the RECORD's request for illustrations which would in Mr. Vlasov's opinion reflect the character of Soviet architecture today.

V.I. Lenin Central Stadium of Moscow; Alexander Vlasov, Architect

ARCHITECTURE IN THE U.S.S.R.: A REPORT FROM WITHIN

Construction in the Soviet Union is expanding with every passing year. Last year's investments in construction amounted to 93.5 billion rubles as against 6.9 billion rubles in 1929. Factories and mills, houses, schools, hospitals and theaters are going up throughout the land. Hundreds of plants are beginning to manufacture ready-made structural elements which are being delivered to the construction sites.

This industrial method of construction has given rise to a number of interesting problems in the sphere of building and architecture.

The Academy of Construction and Architecture, the country's highest institution in these fields and uniting well-known scientists, engineers and architects, was organized in the Soviet Union to aid the further industrialization of the erection of buildings, raise the quality of work, lower its costs and reduce completion schedules. The Academy has been entrusted with the task of coordinating all research work dealing with building construction being carried on by scientific organizations as well as college laboratories. A number of research institutes are functioning under the auspices of the Academy.

The Institute of City and District Planning deals with problems of planning and reconstruction of new and existing cities, as well as minor settlements. This organization handles questions connected with the placing of industrial enterprises, their dwelling areas and transport facilities.

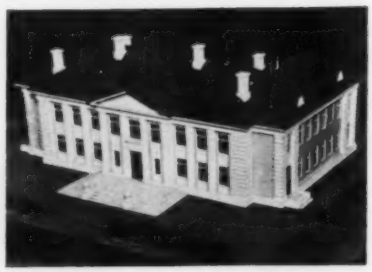
Building and equipping grounds of industrial enterprises, as well as problems concerning typical factory buildings for various branches of industry, are taken up by the Institute of Industrial Buildings and Installations.

New typical layouts for housing construction are taken care of by the Institute of Housing, which carefully studies problems of convenient house planning, cost and mass production of building elements for this type of structures. A part of the work of this institute is the design of plumbing and water supply fittings, as well as furniture.

The Institute of Public Buildings does work on rationalization of designs for schools, hospitals, sanatoriums and other communal structures, and their proper location in cities and towns.

Rural planning and design of buildings connected with all branches of agriculture — livestock barns, buildings for production and storage, rural hydraulic

(Continued on page 338)



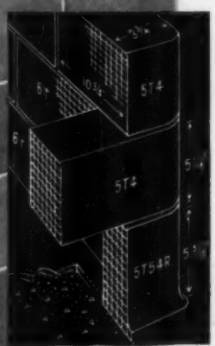
Model of "type project of village school designed by Architect Velikanov. A type project of an urban school by the same architect was awarded a prize and adopted in many districts of the country"

Model of "village nursery designed to accommodate 44 children"; U. Karar'ya and A. Ivanov, Architects

Model of the future Byelorussian Railway Station Square; name of architect not available

imitations never match genuine

STRUCTURAL CLAY FACING TILE



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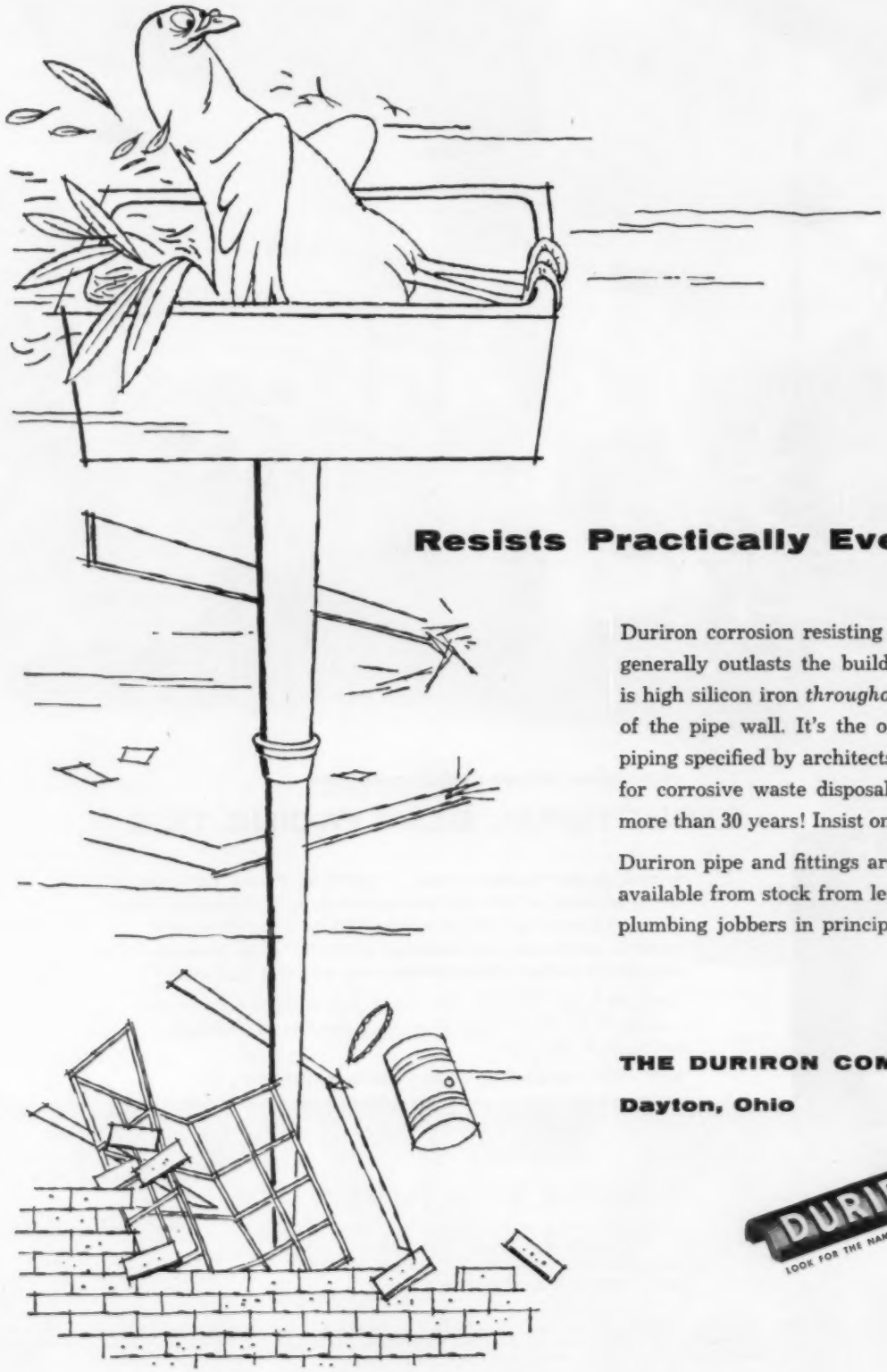

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Distinction, quality, in toilet compartments make an impression on all who occupy or visit a building. Sanymetal's added value costs building owners nothing—actually makes savings—because Sanymetal quality requires the least upkeep, renders the longest service attainable. There is no need to accept less.

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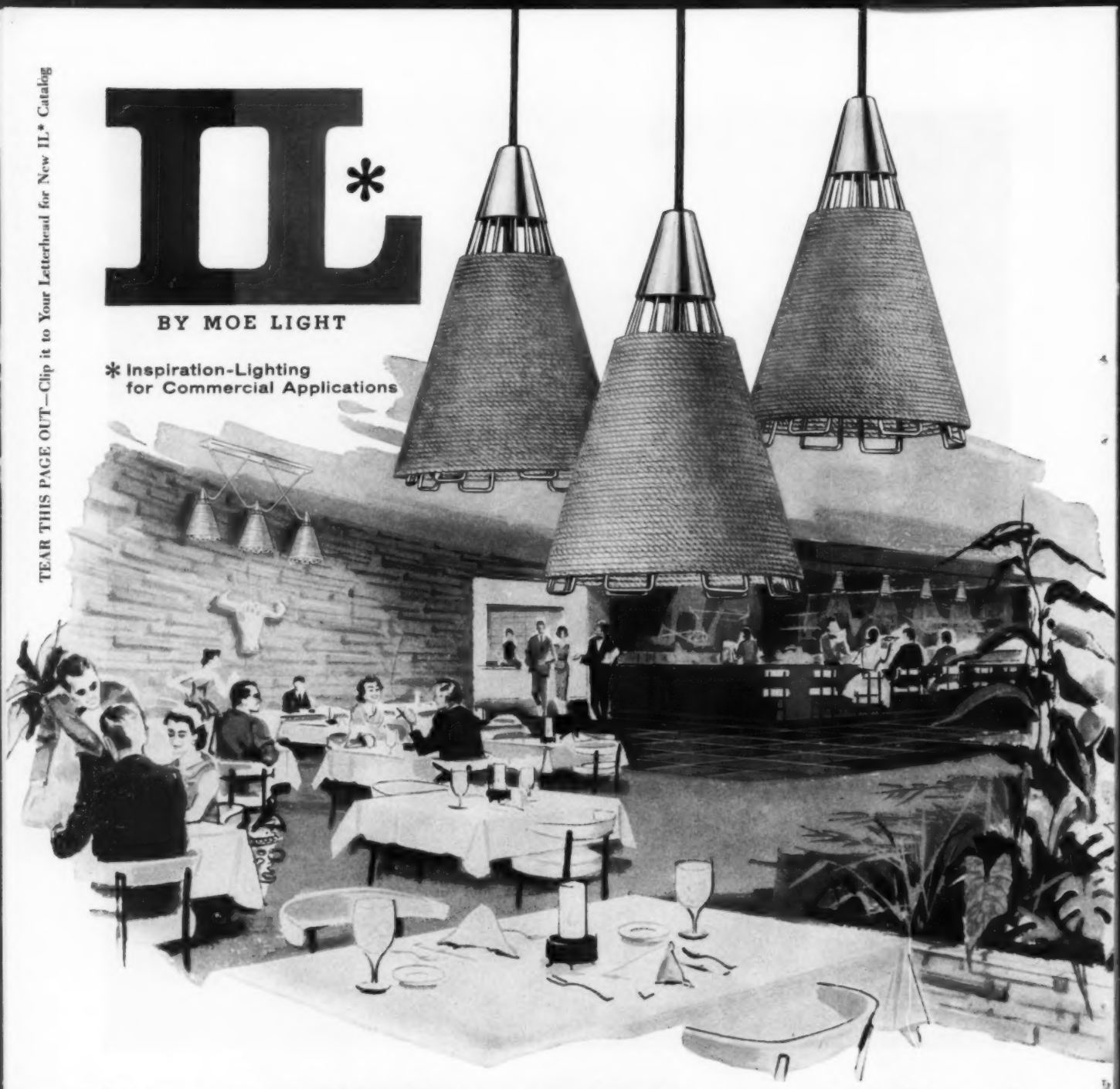

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FREE! A manual of creative lighting for the discriminating professional

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(Fixtures shown: M-1427 3-Lite cluster in main dining area; M-1437 "3-in-line" accents the wall; M-1421 cones over bar.)

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The State of Construction

It was looking like another record year. As the latest monthly figures on contracts for future construction in the U. S., ten per cent over the 1956 month, pushed the 1957 first-half total to $16,958,005,000, up five per cent from the comparable period last year, F. W. Dodge Vice Chairman Thomas S. Holden expressed his belief that "the record to date leaves little room for doubt that the dollar volume of construction activity for the year 1957 as a whole will exceed last year's all-time high." Nonresidential contracts for the first half rose five per cent, residential fell five per cent and heavy engineering rose 21 per cent. For details, page 406.

1100 at San Francisco Hail Prestressed Concrete Gains

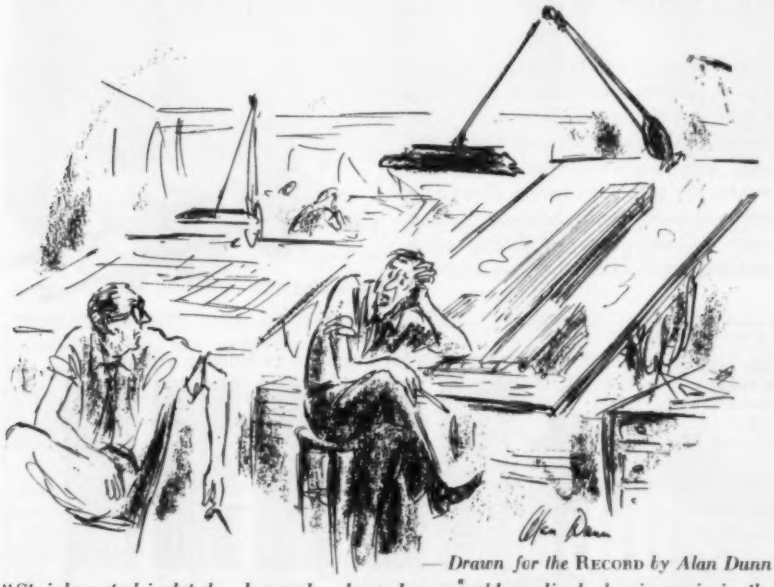
Six years ago, when the M.I.T. conference was held, the future of prestressed concrete in this country was looked at with some interest mixed with skepticism. In the meantime the Korean war intervened and prestressed concrete was found to be an admirable replacement for steel. And the tenor of the World Conference on Prestressed Concrete held in San Francisco last month indicated that it is on its way to becoming accepted as a standard construction material. The conference was sponsored by the Department of Engineering and the University Extension of the University of California, with Prof. T. Y. Lin as conference coordinator and chairman of the general arrangements committee. Concurrent with the World Conference the Prestressed Concrete Institute held its third annual meeting. The week-long program was indeed a World Conference. While Conference officials had expected 900 to attend, the ranks were swelled to over 1100 from some 30 countries and 40 states. Among these were consulting engineers, contractors, fabricators and manufacturers of components that go into the material. Unfortunately there was little evidence of attendance by architects. What the U. S. had to show was that considerable progress had been made in adapting prestressing to the American economy. This involves the use of pretensioning to turn out standard units on a production-line basis. A large number of fabricators are investing in pre-tensioning beds; in fact one conference speaker reported at least 200 in operation, and another speaker indicated that cost of such a plant may sometimes approach $1 million. While it is obvious that for the large run of buildings in this country, standard units will have to be used to make the technique pay off, still there were murmurs that imagination should not be left out in the use of prestressing in novel ways (for example in shells) to create special structures economically. Two of the most talked about papers in the lobby and corridors of the Fairmont were the one on prestressed shells by Prof. A. M. Haas of Delft University, The Netherlands, and the one on automation in prestressed concrete by Prof. V. V. Mikhailov of the U.S.S.R. Machinery has been built in Russia for beams, large slabs, wall panels, beams, purlins, batten, etc. In some cases a "traveler" actually winds stressing steel about the structural member. Several American engineers who heard the paper turned the tables on the Russians, so to speak, in saying that an American inventor had developed similar techniques, but they haven't been used to any extent commercially. Actually the method of prestressing concrete tanks is not a great deal different in principle from what the Russians are using.

Internationals at World Conference on Prestressed Concrete, left to right: Boris Skramtaev, Soviet Academy of Architecture and Construction; Philip Gooding, England, International Federation for Prestressing; Mrs. Lin, Prof. T. Y. Lin, Conference Director; Prof. A. M. Haas, Mrs. Haas, University of Delft, Netherlands; Dr. Fritz Leonhardt, Germany; E. J. Zemitis, Delaware; William E. Dean, keynote speaker, Florida

Twice-Published Architects

Five of the projects which appeared in the Building Types Study on Dormi-

(Continued on page 24)



— Drawn for the RECORD *by Alan Dunn*

"Stainless steel is dated — bronze has been done — gold-anodized aluminum is in the works. . . . How about pewter?"

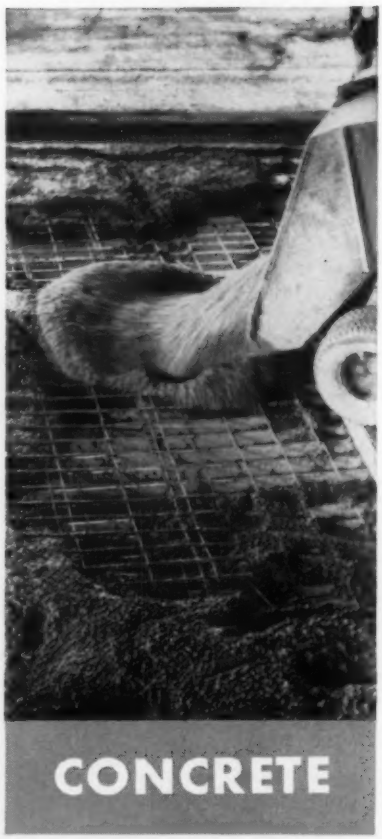
Newly elected officers of the Prestressed Concrete Institute, left to right: Peter J. Verna, Jr., Concrete Materials, Inc., secretary-treasurer; Ben C. Gerwick, Jr., who heads his own firm, president; Harold A. Price, Basalt Rock Co., vice president

PLACE . . .

Cofar units weigh only 2 psf and cover up to 35 sq. ft. Units arrive at job site pre-cut to fit framing. No sorting. No fitting. Placing of units follows closely behind structural steel erection.

WELD . . .

Welded in place, Cofar provides a safe, solid work platform for trades. Concrete crews move in days sooner. Cofar welding gives designers flexibility to meet local codes for lateral forces.



CONCRETE

In monolithic slabs, Cofar offers composite action to resist concentrated loads and horizontal forces. For steel or concrete framing. Cofar underside may be painted for finished ceiling.

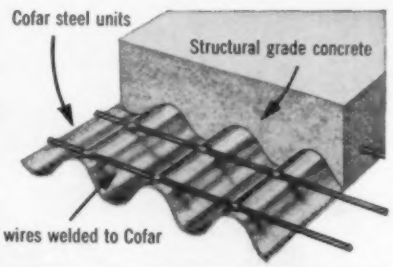
Cofar® combines concrete form and re-steel in one product. Saves time! Saves money!

Cofar units are deep-corrugated, high-strength galvanized steel sheets with "T" wires welded across the tops of corrugations. Cofar provides:

(1) tight concrete form
(2) safe work platform
(3) complete positive reinforcement

"T" wires furnish necessary temperature reinforcing and anchor concrete to steel.

Cofar units lap tightly, prevent concrete leakage and eliminate clean-up time below and are hot-dip galvanized for building-life permanence. When concrete sets, a fire-safe, high-strength reinforced concrete slab results. For more information about time, work and money-saving Cofar construction, contact Granco home or district office. ATTN: Dept. R 712.



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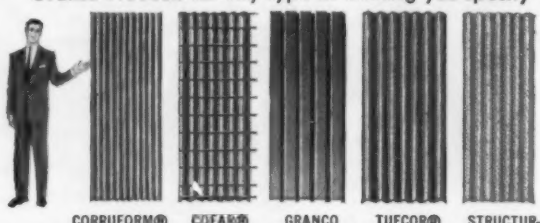

Arlene Francis' new office gets living room personality with rich walnut Craftwall wood paneling!

An ideal creative environment *is achieved for TV's Arlene Francis in this informal "home office". Beautiful Craftwall paneling gives a relaxed feeling that makes work easier.*

Note interesting use of moldings on the walls for framing pictures.

Craftwall has that genuine hand-rubbed look . . . professionally pre-finished to give the most durable, stain-resistant wood finish known. Every "plank" hand-selected to show rich, natural grain.

It's so simple to achieve both home-like livability and striking effects with Craftwall wood paneling. Whatever your projects—offices, shops, hotels—the warmth of Craftwall creates a friendly mood . . . permits a broad range of design treatments.

Nine distinctive Craftwall woods fit the paneling application you have in mind. *Elm*, two kinds of *Birch*, *Cherry*, *Maple*, *Knotty Pine*, *Oak*, *Mahogany* and *Walnut*. And each one has the tough factory finish that shrugs off abuse, stains, dirt. Craftwall wipes clean with a damp cloth . . . stays beautiful even without waxing. It gives real savings on upkeep.

Craftwall's modular panels (48″ x 96″, 48″ x 84″, 32″ x 64″, 16″ x 96″, also longer lengths) help installers do a first-class job for you quickly. The panels go up easily with nails or Roddis Contact Cement—important for fast modernizing work! And when you specify Craftwall your choice is backed by a written life-of-the-building guarantee to your client. For more Craftwall facts, just send the coupon below. (In New York, visit Roddis' Rockefeller Center Showroom, 620 Fifth Ave.)

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Please send me your Designers' Fact File on Craftwall wood paneling.

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THE RECORD REPORTS

MEETINGS AND MISCELLANY

(Continued from page 21)

tories which was part of the RECORD's special issue on campus architecture last month will be published this month in a special section on college housing of the RECORD's sister publication *College and University Business*. The six are: Corry Hall, Antioch College — Skidmore, Owings & Merrill, Architects; Dormitory and Classroom Group, Rutgers University — Kelly and Gruzen, Architects; Abbot Stevens Hall, Phillips Andover Academy — The Architects Collaborative, Architects; Golden Gate Baptist Theological Seminary, Marin County, Cal. — John Carl Warnecke, Architect; Dormitory Group, University of Missouri — Hellmuth, Obata and Kassabaum, Architects.

Building America: PC Tries TV

The Producers' Council has announced plans for a 13-week series of half-hour television programs "primarily beamed to a selective audience of architects, builders, building management, home owners, engineers, designers, contractors and dealers in building supplies." The series will be produced and distributed by Public Service Network of Princeton, N. J., to 200 television stations under the theme title "Building America." Each program is to consist of four five-minute films on products of participating members of the Producers' Council, preceded by a three-minute "editorial" film of an interview with a leading building industry figure. As of mid-August, there was no information as to how many producers had signed up for the series, and no specific date for the opening program had been set.

Of Prison Architecture

C. A. Kelly has succeeded Robert D. Barnes as senior architect of the Federal Bureau of Prisons. Mr. Barnes, who retired July 1 after 25 years in the post, has joined the Jail and Prison Equipment Division of The Van Dorn Iron Works Company.

New Boost for Plastics

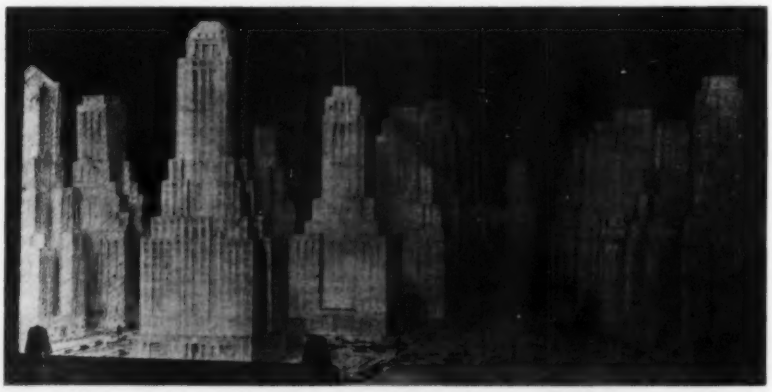
An augmented program on plastics for construction, particularly to promote their use as engineering materials, is headed by William Demarest, as director, plastics in construction, of the Manufacturing Chemists' Association. Mr. Demarest, a Princeton graduate who received his architectural degree from Columbia, was for six years Secretary for Modular Coordination on the staff of the American Institute of Architects in Washington, D. C., and more recently had served as assistant director of the Construction Department and Research Institute of the National Association of Home Builders.

Honor to Mies

Germany's highest honor in the fields of science and art has come to Ludwig Mies van der Rohe. The former director of the Bauhaus, now, as all the world knows, director of Illinois Institute of Technology's Department of Architecture, has been named to the Order Pour la Merite, which has just 39 lifetime members all over the world. The Order was founded in 1740 by Frederick the Great.

A Dream of Skyscrapers — When Setbacks Were New

Architect Edward Steese of Scarsdale sends the photograph below with a note: "I enclose a photograph I took in 1926 or 1927 when I was at the architectural school in Princeton of a group of cardboard of skyscrapers: 'A skyscraper 40 stories high' was the project, and Harvey Corbett was the visiting critic. Setbacks had just been invented in those days and Hugh Ferriss' drawings of imaginary future cities, as well as Corbett's own work, had great stimulating effect on us. Megahyaline buildings had even been thought of, but were a distant dream. Corbett showed us how to make the models out of detail paper, and I thought it would be fun to take a picture of them *en masse*. Park Avenue is beginning to look something like this, and it might amuse you to publish it."



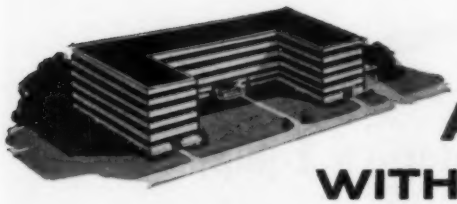
50 Years in Architecture

Frank Grad of Newark this year is celebrating his fiftieth year of architectural practice. At 75, Mr. Grad is still active as senior partner in the firm of Frank Grad & Sons, although as the two sons now associated with him as general partners, Architect Bernard J. Grad and Engineer Howard Grad, assume more of the responsibility, he is able to find more time for his favorite hobby of portrait painting. To mark the jubilee year, the firm has given a total of $10,000 to establish Grad Fellowships in the architectural schools of Princeton and the University of Pennsylvania and scholarships to Newark College of Engineering and Newark Academy.

Convention in Jersey

Meeting for their 57th annual convention, members of the New Jersey Society of Architects and the New Jersey Chapter of the American Institute of Architects devoted three days in June at Asbury Park to the "challenge and inspiration" of the A.I.A.'s centenary. Chief among the scheduled events were the first day's seminar on "The Influence of Technology upon Architecture," with John Knox Shear, editor-in-chief

(Continued on page 364)
(More news on page 28)



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WITH CLEAN, QUIET BEAUTY

Color shown: V-338, Kodiak

Vina-Lux® FLOORS
WITH *Micromatic Veining*

You can depend on Vina-Lux — a long-lasting vinyl asbestos tile with rugged resistance to wear, spilled food and medications. Its tightly textured surface keeps dirt and grease from grinding in — makes maintenance easy and economical.
Resilient, too, Vina-Lux softens foot and wheel noises — reduces fatigue — increases safety with its slip-resistant surface. And now, with the subtle styling of *Micromatic veining*, Vina-Lux in 21 modern colors gives you a big *plus* over other resilient floorings. Samples and color chart are yours on request.

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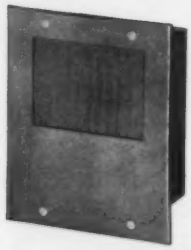
Quality Intercom Equipment for the Quality Home . . .

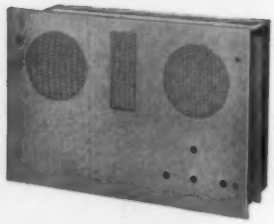
TREND: more intercom systems in homes! FACT: more Lowell units are installed than any other make. REASON: Lowell superiority, well-known in its baffles, assures lasting customer satisfaction, simple installation.

WRITE for complete catalog, detailed specifications, and quotation on custom units!

Model CB3X. Entrance intercom with push-button to operate chimes or doorbell. Circular-louvred opening for 3" speaker. Finish: white enamel. Includes 22 gauge steel box with ¾" knock-outs, provisions for mounting speaker. Useful for homes, multiple apartments, small clinics.



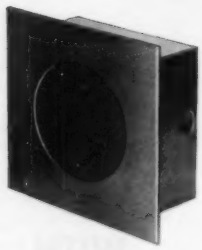
Model C5XD. Heavy 18 gauge steel rust-proof box and plate for recessing small intercom master station in kitchens. Handles 5" speaker, up to 6 stations. Available in either rectangular or circular opening.



Deluxe Model CK7X. For combination recessed radio and master intercom. 18 gauge rust-proof box with ¾" knock-outs on all sides. Plate available in either primed coated steel or stainless steel.

Model C5STX. Steel sub-station box and face plate with fine perforated steel mesh grille. Suitable for mounting either 5" or 6" speaker, all hardware furnished.

Model C5RX. Steel sub-station and grille with opening for 5" speaker, provision for mounting push-to-talk switch. Wall or ceiling mounting. All hardware furnished.



Model C5X. Zinc-chromated sub-station face plate with spot-welded perforated metal grille. Speaker mounts directly to P46X protective steel box, not to plate.

LOWELL . . . The ONE source for immediate delivery of over 100 models: intercom equipment, wall and ceiling baffles, protective enclosures, grilles and mounting accessories.

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Philadelphia **where the *accepted* word for elevators is OTIS**

In the City of Brotherly Love, a new feeling of friendliness marks the widespread acceptance of completely automatic OTIS elevators. Business people enjoy touching electronic elevator buttons for themselves and other tenants. They assist visitors. Everybody likes automatic AUTOTRONIC elevators for their greater freedom of action. In Philadelphia, 66% of the elevators are by OTIS—first to introduce completely automatic elevatoring. As always, progress is expected of the leader. Outstanding value has made OTIS the accepted word for elevator quality in the cities of the world.

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Automatic Autotronic® or Attendant-Operated Passenger Elevators • Escalators • Trav-O-Lators
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The Baker-Raulang Company, an Otis subsidiary, is the maker of Baker Gas and Electric Industrial Trucks •

Baker® industrial trucks

 (Continued from page 24)

ARCHITECTURAL BEAUTY IN STEEL: AN EXHIBITION

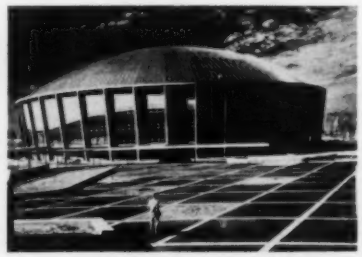
Having since 1928 carried on a program honoring "Beauty in Steel Bridges," the American Institute of Steel Construction has this year done the same thing for buildings in an exhibition, "Structural Steel in Today's Architecture." The exhibition, which previewed in New York, will tour the country under the auspices of the American Federation of Arts.

Though not specially composed for the purpose, the exhibition helps to celebrate the centenary of the Bessemer convertor process, which made rapidly produced steel available for the first time in large quantities. The period has seen the demand for fabricated structural steel climb from an estimated 1.5 million tons in 1910 to nearly three times that figure in 1957, when estimated bookings for 4,050,000 tons are expected.

The exhibition schedule: September — Los Angeles; October — Del Coro-

(Continued on page 372)

1. Coliseum, Charlotte, N. C.; A. G. Odell Jr. & Assocs., architects. 2. Lake Shore Drive Apartments, Chicago; Ludwig Mies van der Rohe, Pace Assocs., Holsman, Holsman, Klekamp & Taylor, architects



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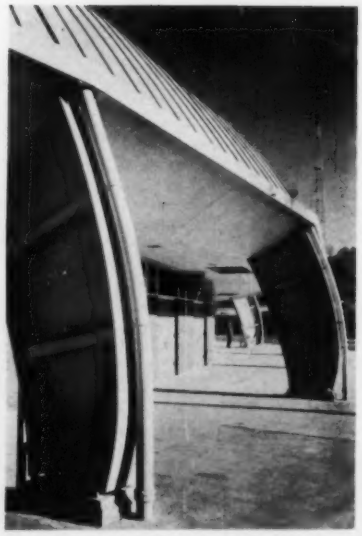

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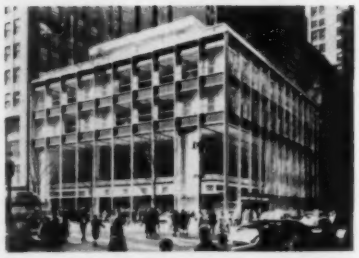

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3. Mile High Center, Denver; I.M. Pei & Associates, architects. 4. Alexander Memorial Center, Georgia Institute of Technology; Aeck Associates, architects. 5. Manufacturers Trust Company, New York City; Skidmore Owings & Merrill, architects. 6. Bandshell, St. Petersburg, Fla.; William B. Harvard, architect. 7. Alcoa Building, Pittsburgh; Harrison & Abramovitz, architects. 8. Northeast Branch, Seattle Public Library, Seattle; Paul Thiry, architect. 9. Socony-Mobil building, New York City; Harrison & Abramovitz, architects

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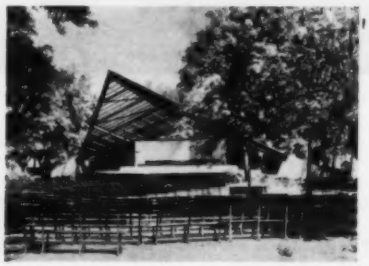

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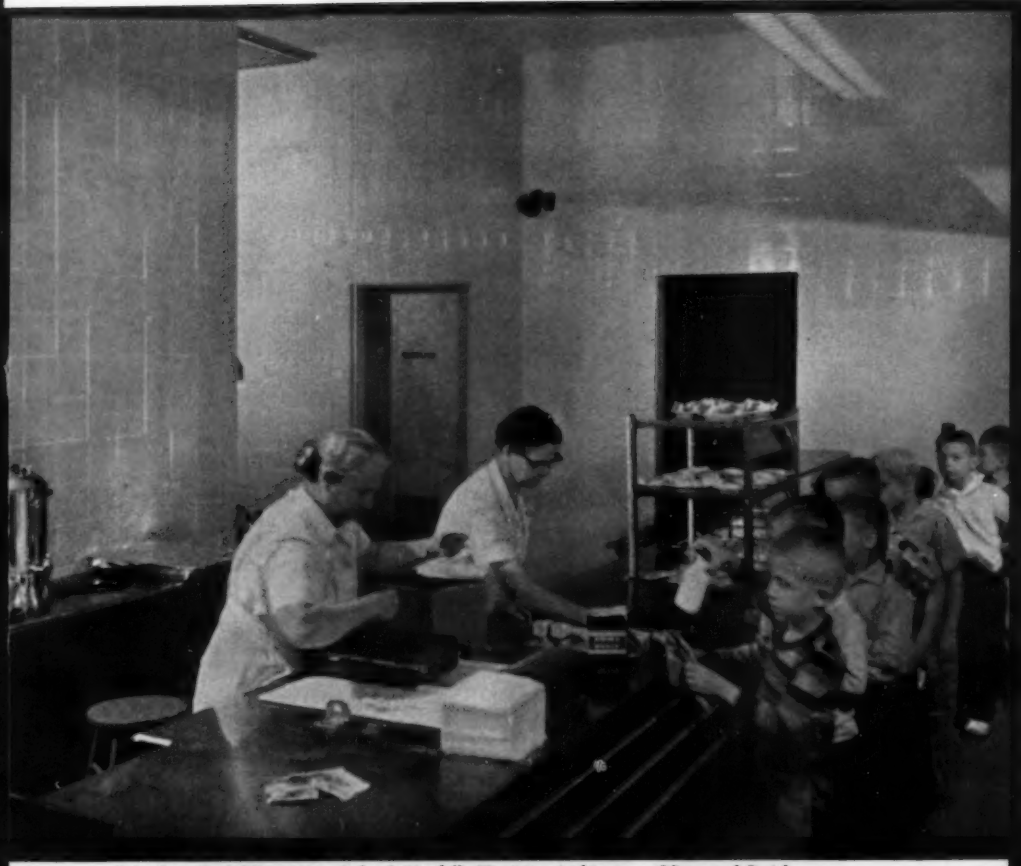

Suburban Park Elementary School, Norfolk, Virginia. Architects—Oliver and Smith

Cost of Cleaning
A Square Yard of Surface

Glazed Ceramic Tile	6¢
Marble Shower Partitions	7¢
Metal Partitions	9¢
Seamless Painted Wall-Smooth	11¢
Painted Concrete	12¢
Glazed Structural Tile With Struck Joints	13¢

SOURCE: Modern Sanitation Magazine

The School Board Demanded Modern Design

—But Insisted on Economy...

Ceramic Tile Gave Both

Tremendous progress in creative school design has kept pace with rapid advances in educational theories and practices. School boards are demanding physical designs which fulfill these theories—and fit their budgets. Here's how ceramic tile is contributing to modern school design and budget needs.

Take the Suburban Park Elementary School in Norfolk, Virginia. Designed by Oliver and Smith, it was built at a cost of $10.62 a square foot—a figure at the lower end of the national square foot school building cost scale.

Fitting in with the need for economy, Oliver and Smith used a new, approved method of ceramic tile installation. They specified tile installed by the newly developed thin-set method—*directly on cinder block*. The resulting economies permitted extensive use of tile in corridors, washrooms, cafeteria and the gymnasium.

Besides the obvious benefits of durability, beauty and design scope (aided by a size gamut from one-inch to foot-square and larger units), tile gave this school a lifetime of maintenance-free economy in key areas. Just how much this means is brought home graphically in the chart based on statistics from Modern Sanitation Magazine.

Whether your next project is institutional, commercial or residential, be sure to consider the durability, design and economy factors of modern ceramic tile installations.

The Modern Style is CERAMIC tile

TILE COUNCIL OF AMERICA, INC., 800 Second Avenue, New York 17, New York. Room 933, 727 West Seventh Street, Los Angeles 14, California • Room 220, 3409 Oak Lawn Avenue, Dallas, Texas. **Participating Companies:** American Encaustic Tiling Co., Inc. • Atlantic Tile Mfg. Co. • Cambridge Tile Mfg. Co. • Carlyle Tile Co. General Tile Co. • Gladding, McBean & Co. • Jordan Tile Mfg. Co. • Lone Star Ceramics Co. • Monarch Tile Mfg. Inc. • Mosaic Tile Co. • Murray Tile Co., Inc. • National Tile & Mfg. Co. • Olean Tile Co. • Pacific Tile and Porcelain Co. • Pomona Tile Mfg. Co. Ridgeway Tile Co. • Robertson Mfg. Co. • Royal Tile Mfg. Co. • Sparta Ceramic Co. • Stylon Corp. • Stylon Southern Corp. Summitville Tiles, Inc. • Texeramics, Inc. • United States Ceramic Tile Co. • Wenczel Tile Co. • Winburn Tile Mfg. Co.

The *IDEA** of the architect . . .

The beauty of *WOOD* . . .

The *SKILL* of Woodwork craftsmen . . .

these are the elements of . . .

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Blending these elements to produce architectural woodwork and cabinetwork has been the service of Woodwork Corporation for two generations. Our versatile organization is adaptable to large and small projects, prepared to build and finish to specification, with installation optional.

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IN SWEET'S ARCHITECTURAL FILE

Design Possibilities... Astronomical!

HAUSERMAN MOVABLE WALLS OF REYNOLDS ALUMINUM

When Hauserman and Reynolds, together, offer you the versatility of aluminum for interior walls, design scope is almost limitless. You choose from any number of embossed textures... multiplied by innumerable colors and countless panel arrangements. Aluminum extrusions provide still another multiplier... joining wall sections with hairlines or narrow beads or wide posts in any profile and in any finish, including brilliant anodizing.

Total possibilities... astronomical!

And all this beauty is combined with the basic advantages of Hauserman Movable Walls... earliest occupancy, lowest maintenance, lifetime service. Write for literature. Or consult the Yellow Pages (under PARTITIONS) and call your nearby Hauserman representative.

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The Finest Products Made with Aluminum are made with REYNOLDS ALUMINUM

See "Circus Boy", Sundays, NBC-TV. Watch for Reynolds on "Disneyland", ABC-TV Network.

a WASHINGTON *report by Ernest Mickel*

DESIGNING AGAINST NUCLEAR WEAPONS: THE NEW HANDBOOK

A broad outline of many design problems characteristic of a nuclear age and the new text on blast-resistant and shelter design are contained in the 579 pages of a major report, "The Effects of Nuclear Weapons," recently prepared by the Department of Defense for the Atomic Energy Commission.

This volume updates a previous report, "The Effects of Atomic Weapons," published in 1950. Dr. Samuel Glasstone, who was executive editor of the earlier publication, compiled and edited the text of the new report. It is available, paper-bound, from the Superintendent of Documents, Washington 25, D. C., for two dollars a copy.

The long-span leap from atomic to nuclear in less than a decade has brought with it manifold problems for the architect and engineer faced with the question of designing for blast resistance — or no — or how much — and the design of shelters as such.

The government again makes it clear in this report that because of the uncertainties of a nuclear age — point of blast, distance from ground zero, wind direction and fallout — the owner has to make a decision on the relative value of his structure to determine the extent to which it should be blast resistant. Under a section on blast-resistant structures, it is stated: "The choice of the blast load for design purposes must be based on a balance between the cost and the overall importance of the particular structure."

The AEC volume notes that after the loading has been prescribed, a dynamic analysis of the proposed structure must be undertaken to determine the stiffness and ultimate strength necessary to prevent collapse or to limit the plastic deformation to the optimum which has been decided upon. The limit would be determined by the functional requirements of the activities or operations for which the structure is to be used.

The critical deformation may be restricted to that which will prevent the

(Continued on page 350)

BLAST DAMAGE: SIX KINDS OF TEST STRUCTURES

STEEL — Rigid-frame building; 3.1 psi overpressure

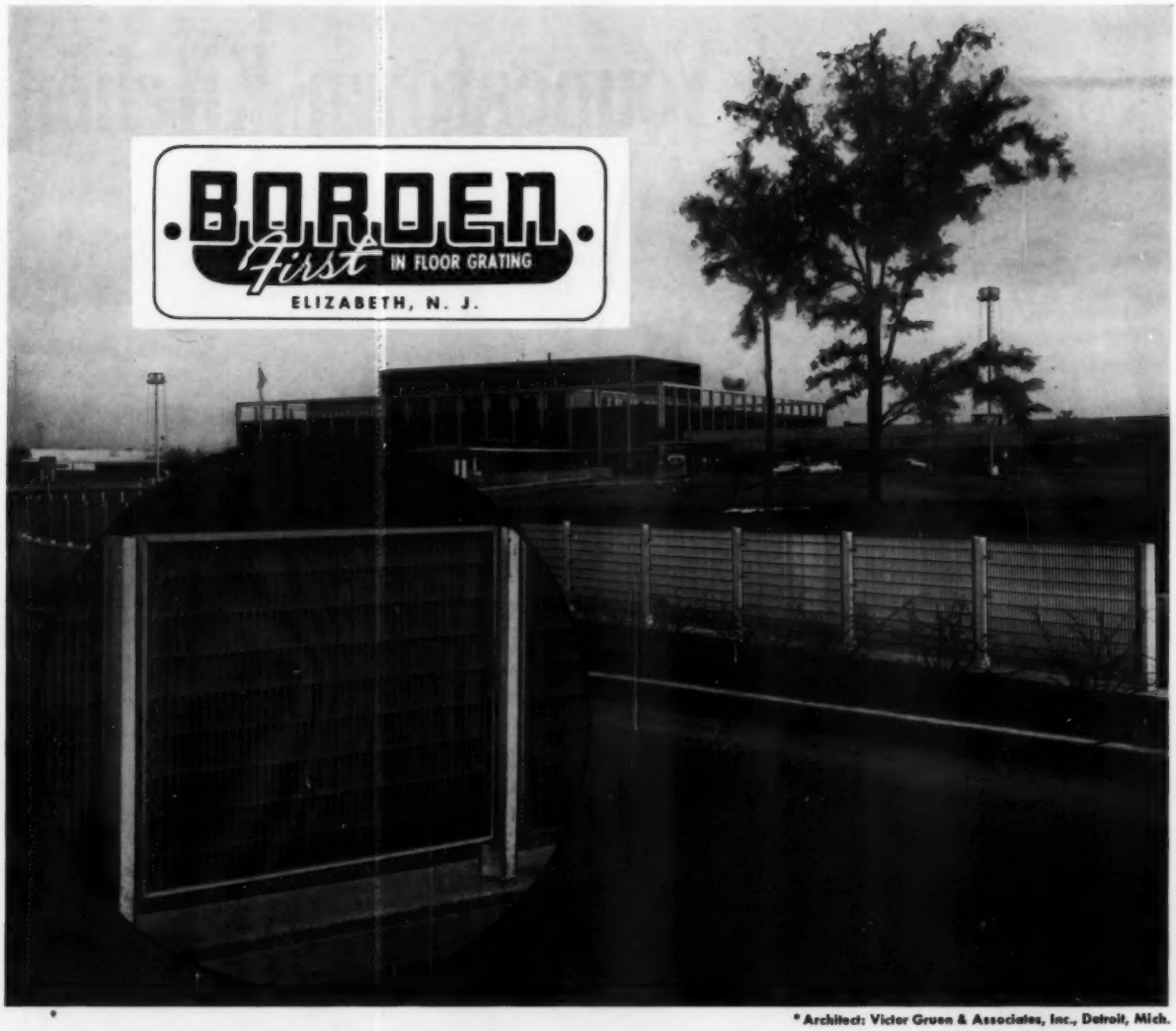
STEEL — Self-framing panels; 3.1 psi overpressure

WOOD — Two-story frame house; 5 psi overpressure

BRICK — Unreinforced two-story house; 5 psi overpressure

CONCRETE — Reinforced precast; 5 psi overpressure

MASONRY BLOCK — Reinforced; 5 psi overpressure



* Architect: Victor Gruen & Associates, Inc., Detroit, Mich.

NEW IDEA FOR FENCES — MAINTENANCE-FREE ALUMINUM GRATING

As shown above, Borden's pressure-locked Aluminum Grating has been used as fencing for the new J. L. Hudson Northland Shopping Center in Detroit, Mich.

The light weight aluminum grating forms a child-proof and maintenance-free fence. The alloys used were selected for their corrosive resistance and high strength.

Thus in the utilization above, Borden has helped open the way for another new field for grating where only standards of quality equal to Borden's will do.

Write for complete
information on BORDEN
All/Weld, Pressure Locked, and Riveted Floor
Gratings in this FREE 16-page catalog

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TITLE.....
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"A Youngstown Kitchen...

Quick Delivery from Over 80 Distribution Points

Quality Protects Your Investment — **American-Standard** *Quality Is Available At No Extra Cost!*

the happiest room in the house!"

Here's Why *this nationally advertised Youngstown Kitchens slogan is important to architects*

- **Immediate Builder and Consumer Acceptance.**
- **Eye Appealing Kitchen Design with America's most popular steel kitchen units.**
- **Flexibility of design with precision engineered modules.**
- **Economy of home construction with quick, easy installation.**

Yes, the Youngstown Kitchen that you specify will be the happiest room in the house from your standpoint as well as from your client's. Youngstown Kitchens quality manufacture has made this the standard in steel kitchen components. Home owners know and recognize this famous name. They're proud of the clean efficiency and amazing durability of Youngstown Kitchens and they'll praise your choice of decorator designed cabinet colors that blend so perfectly with modern kitchen decor. From your point of view Youngstown Kitchens offer a complete kitchen service with a complete variety of units to suit every installation from 1-wall efficiency kitchens to superb custom kitchens including dishwashers and gas or electric wall ovens and counter-top ranges. A complete kitchen planning service is available at your request, too. Why not see your Youngstown Kitchens Representative now or mail the coupon below for full details.

Youngstown Kitchens

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YOUNGSTOWN KITCHENS
Dept. AR9
Warren, Ohio

Please send me complete details and specifications on your complete line of Youngstown Kitchens units.

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CITY_____ STATE_____

By John Caulfield Smith

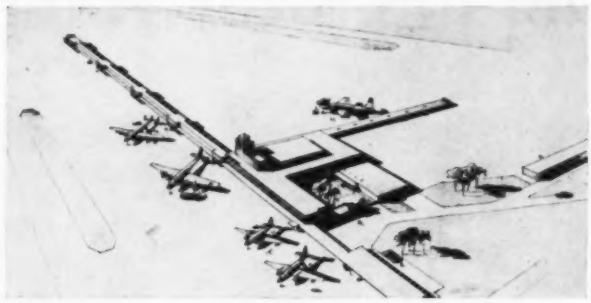
SPOTLIGHT ON TERMINALS AS AIRPORT SPENDING DOUBLES

The five terminal buildings shown in rendering on this page are major projects under way in the Federal government's continuing program of expanding airport facilities across Canada. This program, which had until this year centered mainly on extension of runway facilities and parking aprons, service facilities and the like, is now concentrating more largely on development of new airports and terminal buildings; and in the year that began April 1 estimated expenditures will reach $38,318,000, an increase of $17.5 million over the 1956 appropriation.

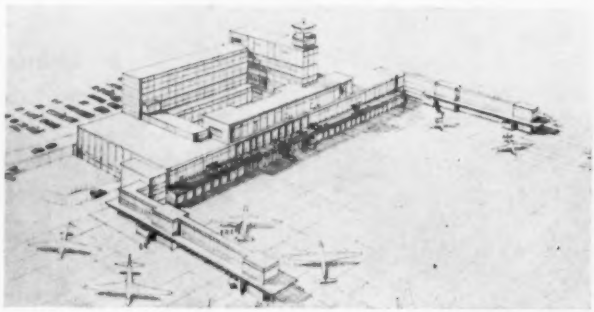
Planning and design are the responsibility of the Architectural Department of the Department of Transport, whose policy as officially described is to engage architects in private practice to work with Chief Architect W. A. Ramsay "wherever possible."

Basic to the development of all the individual schemes, whether or not private architects are commissioned, are the extensive studies by Mr. Ramsay's staff on major planning considerations, not forgetting the new problems imposed by the imminence of the "jet age" in air transport.

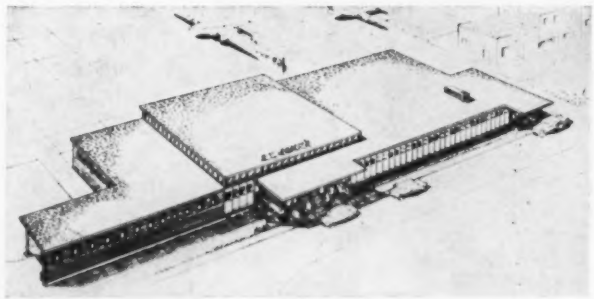
To take the Montreal terminal, largest of the current projects, as an example, the Department's studies of the problem of passenger circulation, reviewed in the light of the impact of jets with their promise of greatly increased passenger loads, have produced the two-finger scheme shown here. As described by the Department: "With the introduction in the near future of jet-propelled aircraft, the projected corridor type of finger has come under review to determine if this is the best method for the new type of aircraft. . . . The conclusion has been reached that the Montreal Terminal Building will be constructed with two 'fingers' attached to the terminal building — one 'finger' providing gates for domestic aircraft and the other providing gates for trans-border and trans-Atlantic aircraft. These 'fingers' will each be two-level corridors, the upper corridor for enplaning passengers and the lower corridor for deplaning passengers. In appearance the 'fingers' will match the terminal building, but particular attention is being paid to the details of their construction so that, at a future date if conditions demand, these 'fingers' may be modified or converted to a detached or isolated gate system."



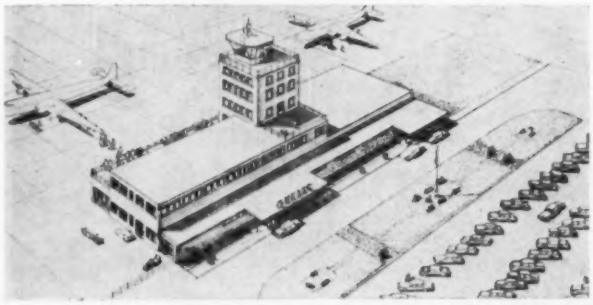
GANDER — Architects, Durnford, Bolton and Chadwick; estimated cost: $2.7 million



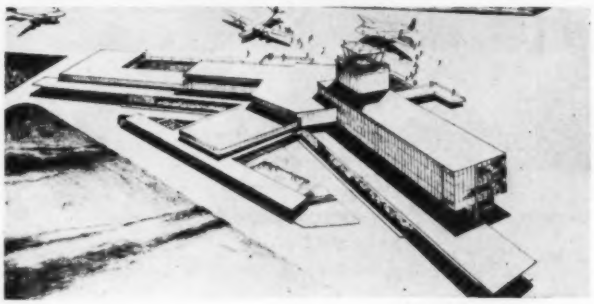
MONTREAL — Architects, Isley, Templeton, Archibald, Larose & Larose; estimated cost, $10–12 million



ST. JOHN'S — Architect, Department of Transport; estimated cost, $600,000



QUEBEC CITY — Architect, Department of Transport; estimated cost, $750,000



OTTAWA — Architects, Gilleland & Strutt; estimated cost, $4.5 million

(Continued on page 40)

WHO SAID DIRT CHEAP?

It costs your clients plenty and tarnishes your best work

DIRT CAN "age" a building fast. In hotels, drapes, carpeting, furniture and decorations depreciate rapidly. Occupants suffer discomfort of smoke-filled rooms, as well.

In any building, walls, fixtures—all things inside—lose their attractiveness and value before they should.

Most of this soiling is caused by airborne dirt particles less than 1/25,000 of an inch in size!

Now Honeywell's new Electronic Air Cleaner can remove particles this small—even 100 times smaller... ridding the air of contaminants *before* damage occurs. It's 6 times more effective than the ordinary mechanical air filter*.

The results: the practical efficiency and interior beauty you achieve remains like new indefinitely.

Occupants enjoy greater comfort, owner's cleaning and replacement costs drop appreciably.

It is an impossible task for mechanical type air filters to remove microscopic contaminants like oil smoke, fumes, tobacco smoke and most of the fly ash in the air. And these are the ones causing the greatest staining. In this area lie bacteria and viruses, too, the cause of much illness.

Specify a Honeywell Electronic Air Cleaner. Save your creative efforts and your clients money as well. For complete details call your local Honeywell office or write Minneapolis-Honeywell, Dept. AR-9-232, Minneapolis 8, Minnesota.

Honeywell* *According to tests developed at the National Bureau of Standards, electronic air cleaners remove at least 90% of the dirt particles causing the greatest staining, while ordinary mechanical filters remove only about 15%.*

H First in Controls

In 1907 ST. BONIFACE HOSPITAL Pioneered with

Architects and Engineers:
GREEN BLANKSTEIN RUSSELL & ASSOCIATES, Winnipeg, Man.

Air Conditioning Engineers:
CARRIER ENGINEERING LTD.

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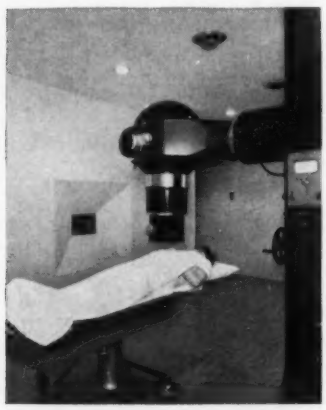
New Wing, **BOWYER-BOAG LTD.**

Old Section and Nurses Residence,
MIKKELSEN-COWARD & CO. LTD.



Cobalt 60 Unit above is one of the many features in the completely equipped Radiology department. It is a high energy source, for treatment of cancer and other malignancies.

In the Board Room, left to right, Dr. Paul L'Heureux, Medical Director, Sister Superior G. Jarbeau, Administrator and her Assistant Sr. A. Trottier, Mr. G. L. Pickering, Comptroller. Below on opposite page is Chief Engineer Louis Verscheure at air conditioning control panel.

ST. BONIFACE HOSPITAL, located across the Red River from Winnipeg, Man., is one of the largest hospitals in Western Canada. It was built and is operated by the order of the Grey Nuns of Montreal.

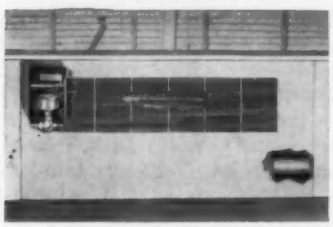
POWERS Pneumatic Temperature Control for Heating

NOW, it's Canada's First Completely Air Conditioned Hospital with

Powers Temperature and Humidity Control helps Nurses to work more effectively and care for more patients. Surgeons operate with less fatigue and strain. Patients recover sooner and require less service.

Powers Pneumatic Thermostats maintain set temperatures constantly. They need no daily checking or readjusting.

Over 619 Powers Heating-Cooling Thermostats and 708 PACKLESS Control Valves regulate the volume of chilled or heated water to unit air conditioners used in the perimeter areas of the buildings.



(C49)

POWERS Quality System of Air Conditioning Control

St. Boniface Hospital with 670 beds, offers the most advanced facilities and equipment for diagnosis and treatment of disease, patient care and comfort.

Year 'round Air Conditioning regulated by Powers individual room control provides the right temperature required for every hospital activity. Powers pneumatic thermostats are used in:

13 OPERATING ROOMS, central sterilizing and supply area, recovery and delivery rooms, 9 nurseries, attractive rooms for patients, offices, public spaces, pharmacy, laboratories, radiology and therapy departments, kitchen, cafeteria and dining rooms, laundry, autopsy room, solariums for convalescent patients and a colorful playroom for children.

Central Supply Units furnish properly conditioned primary air and heated or chilled water to over 600 unit air conditioners in the perimeter areas of the buildings. Occupants in each space can dial the temperature they like best.

Interior Zones, operating rooms and other spaces receive conditioned air from central supply units. Here Powers control automatically adjusts temperature and humidity to the requirements of occupancy and outside weather.

Nurses Home and School of Nursing with over 200 students, have direct radiation throughout controlled by Powers.

Powers Thermostatic Shower Controls insure comfort and safety of patients and nurses.

Are You Planning a New Hospital or any other type of building? Ask your architect or engineer to include a Powers Quality System of Temperature Control. You will help insure utmost comfort and lowest cost for upkeep.

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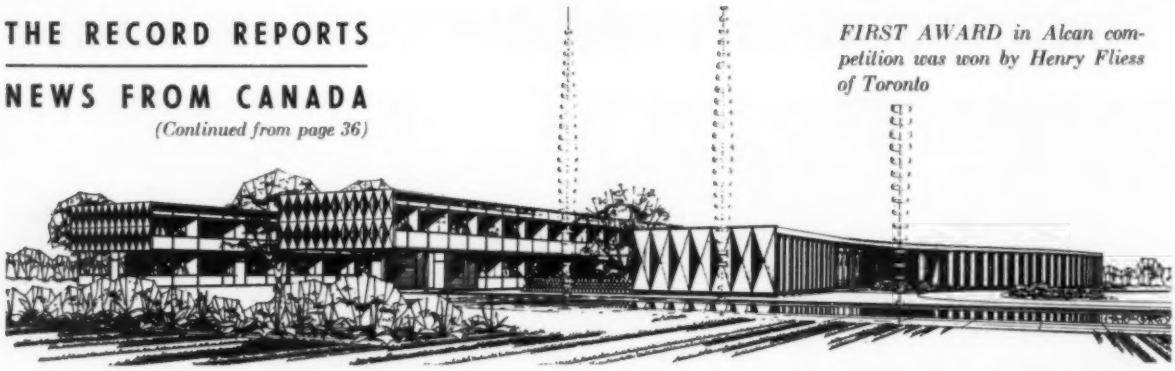
SKOKIE, ILLINOIS | *Offices in chief cities in U.S.A., Canada and Mexico*

65 Years of Automatic Temperature and Humidity Control

THE RECORD REPORTS

NEWS FROM CANADA

(Continued from page 36)



FIRST AWARD in Alcan competition was won by Henry Fliess of Toronto

SECOND AWARD — Blankstein & Coop of Winnipeg submitted this design

THIRD AWARD — Scheme of D. F. Lebensold and J. Schreiber, Montreal

WINNERS ARE ANNOUNCED IN ALCAN COMPETITION

Henry Fliess, Toronto architect, was winner of the first award of $6000 in a competition sponsored by the Aluminum Company of Canada Ltd. for the design of a sales office building.

Second award of $3000 was won by Blankstein & Coop, Winnipeg; and the third award of $1000 went to D. F. Lebensold & John Schreiber, Montreal. Four honorable mentions of $500 each were awarded to Walter Aguis, Toronto; Eugene Janiss, Toronto; Jean-Paul Pothier, Montreal; and W. A. Salter and D. E. Flemming of St. Catharines.

Site for the proposed building is on the outskirts of Toronto close to the future Etobicoke Municipal Center. Estimated cost of the building is $500,000.

Seventy architects submitted entries in the competition, which was conducted in accordance with the R.A.I.C. code.

Jury was composed of P. C. Amos, Montreal; A. F. Duffus, Halifax; H. H. G. Moody, Winnipeg; W. R. Souter, Hamilton; and J. H. Wade, Victoria. Richard E. Bolton, Montreal, served as professional adviser.

(Continued on page 42)

Memo: to Architects

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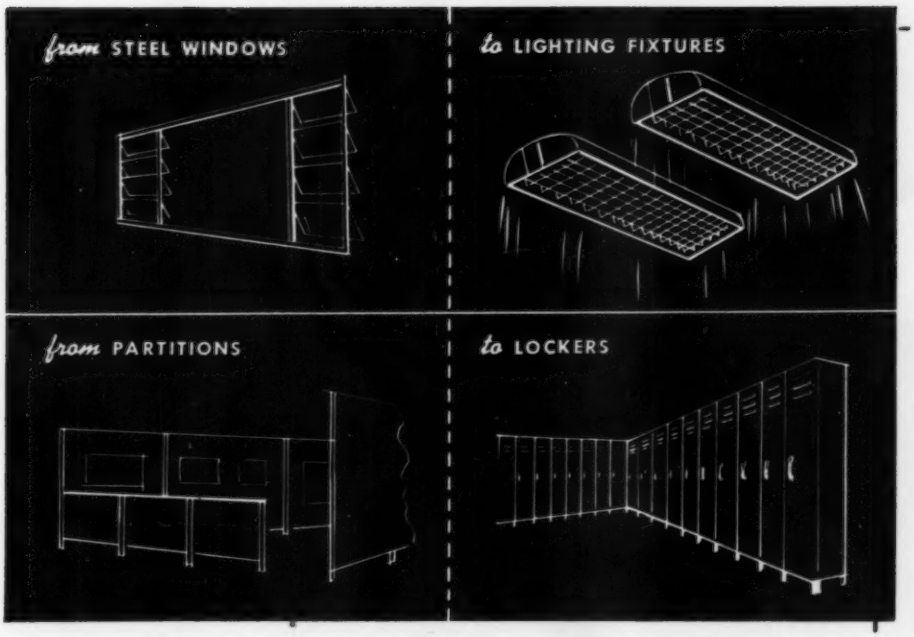

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THE RECORD REPORTS

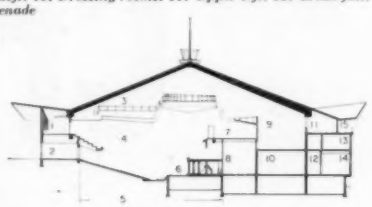
NEWS FROM CANADA

(Continued from page 40)

SHAKESPEARE THEATER OPENED IN STRATFORD

A $1.5 million theater designed to seat more than 2000 people within "intimate" distance of a central stage and incorporating in its structure the existing reinforced concrete amphitheater has replaced the tent used for the past four years by the Shakespearean Festival

Below right — 1. Gallery promenade. 2. Auditorium promenade. 3. Catwalk. 4. Auditorium. 5. Existing amphitheater and stage. 6. Stage. 7. Orchestra platform. 8. Backstage. 9. Loft. 10. Dressing rooms. 11. Upper loft. 12. Crush fall. 13. Wardrobe workshop. 14. Property room. 15. Open promenade



Theater at Stratford, Ont. Rounthwaite and Fairfield were the architects.

The auditorium, 150 ft in diameter, surrounds the stage to the extent of 220 degrees of a circle. There are no interior columns; the 200-ton folded concrete slab roof, 70 ft above grade, is supported by 34 steel beams stressed partly to a central hub and partly to a reinforced concrete tension ring around the perimeter of the building, for a 150-ft clear span.

The new theater opened in July and theatrical reaction was enthusiastic. "The authorities responsible for the Canadian Festival," said *New York Herald Tribune* critic Walter Kerr, "have created something more than a dazzlingly handsome and superbly functional playhouse. They have given us the only really new stage, and the only really new actor-audience experience, of the last hundred years on this continent."

(Continued on page 44)

MEADOWS—Terre Haute Yeager Architects, Terre Haute, Ind.

163rd STREET—Miami Archts. Gamble, Pownall & Gilroy, Fort Lauderdale

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LAMAR AIRWAYS—Memphis Archts. Sidney H. Morris & Associates, Chicago

SOUTHGATE—Tucson Architects, Blanton & Cole, Tucson, Ariz.

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THE RECORD REPORTS
NEWS FROM CANADA

(Continued from page 42)

INTERNATIONAL COMPETITION OFFERS $25,000 FIRST PRIZE

An international architectural competition for design of an $18 million city hall for Toronto will open October 1. In the first of two stages, eight winners will be selected to compete for the $25,000 first prize; the seven losers will receive awards of $7500 each. Decision of a five-man jury of internationally known architects will be made known very shortly; composition of the jury, to include two Canadians, was not immediately announced. Prof. Eric R. Arthur is professional adviser.

Toronto City Council has given official sanction to tentative rules and conditions governing the competition. Entrants must lay out the entire civic square, bounded by Bay, Queen, Chestnut and Hagerman Streets. The area not built upon will become a park and at least one pool must be included.

The present Registry Office is to be demolished. Professor Arthur has said that he regards it as "a very correct building of the classical period, but a very dull one. It is not a work of art to be preserved, and its presence would greatly hamper site planning for the new city hall."

The Registry Office will be replaced by space in the new city hall. Latter building is to have a floor area of 660,000 sq ft. One of the competition requirements is that the design must make provision for future expansion.

1957 CONSTRUCTION TOTAL NOW SEEN AT $6.9 BILLION

Canadian investment in construction may reach $6.9 billion or three and a half per cent more than originally expected, according to revised estimates on capital spending issued by the Department of Trade and Commerce.

This new estimate would put the 1957 construction program about nine per cent above last year's record total of $6.4 billion.

The increase is primarily due to upward revisions in the intentions of the fuel and power industry and mining.

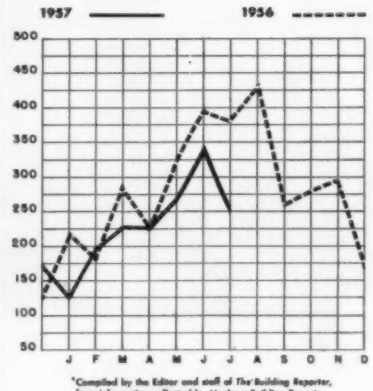
ARCHITECTURAL GRADUATES SCARCEST IN '57 TILL '61

A survey conducted by the R.A.I.C. shows that graduates of Canadian schools of architecture in 1957 are likely to be fewer than in any of the five years until 1961. Here are the estimates:

Institution	1957	1958	1959	1960	1961	Total
Ecole des Beaux Arts	10	21	18	17	33	99
McGill	17	25	25	29	33	129
Toronto	30	34	37	40	78	219
Manitoba	21	20	33	28	38	140
British Columbia	16	10	20	16	30	92
Total	94	110	133	130	212	679

Contracts Awarded: Comparative Figures*

(in $ million)



*Compiled by the Editor and staff of The Building Reporter, from information collected by Maclean Building Reports

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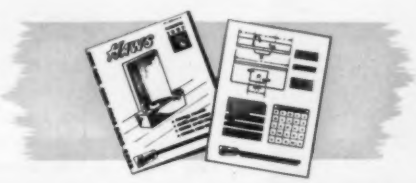

HAWS Model 2546-4 — Reinforced fiberglass, one-piece deck-top and receptor in color. HAWS Model 414A aerated gooseneck faucet at left, and Model 2N2 sanitary drinking faucet at right — both VANDAL PROOF mounted.

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LEASE-PURCHASE IS DEAD: NO HOUSE ACTION ON BILL

The last faint glimmer of hope for reviving the lease-purchase program of public building construction went out when House Speaker Sam Rayburn (D-Tex.) said he looked for no action this year on either lease-purchase renewal or authorization of a direct appropriation program.

The Senate had passed an extending bill, giving three additional years of life to the lease-purchase effort. This measure contained certain stipulations which the administering agency, General Services Administration, and its Public Buildings Service, said would make the program more workable.

GSA's position was outlined in a letter sent to the House Public Works Committee after the Senate had acted. This said in part: "Since construction costs have substantially increased since the dates of authorization [of L-P projects], it is our belief that very few construction contracts could actually be let. Without amendments included in S. 2261 as passed by the Senate, it is improbable that the necessary financing could be secured except in a very few special cases."

A sort of deadlock developed when the House Public Works Committee reported out a bill totally ignoring the lease-purchase plan and calling instead for a $1.5 billion program of building construction by the direct appropriation method. The report accompanying this measure rebuked the lease-purchase principle, branding it "the most indefensible waste of funds in the history of government construction," and a complete failure due to basic weaknesses in the program.

Answering arguments that Congress would never approve a direct appropriation for construction of public buildings, this report said "it would seem certain that when it is realized that direct appropriations will save a vast amount of money for the taxpayers, funds for the necessary buildings will follow." The committee did not share the GSA faith in the Senate's proposed program changes, making clear that it thought agency officials themselves were doubtful the program could be made to succeed.

Minority views urged House enactment of the Senate-passed measure, holding that there is little actual difference in cost between the two systems. These argued that for direct appropriations it still would be necessary to borrow money and pay interest. The minority also stated that a lease-purchase program would be helpful in times of great unemployment, with many public buildings in the planning stage ready for prompt construction.

The lease-purchase program itself expired as law July 21.

PRESIDENTIAL GROUP ASKS HILL-BURTON FOR COLLEGES

A program of Federal grants-in-aid on a matching basis, through procedures similar to those of the Hill-Burton hospital program, should be developed to assist both public and private institutions of higher learning in the construction of non-income-producing facilities such as classrooms, laboratory, library and administrative buildings, according to one of the recommendations in the second report of the Presi-

(Continued on page 48)

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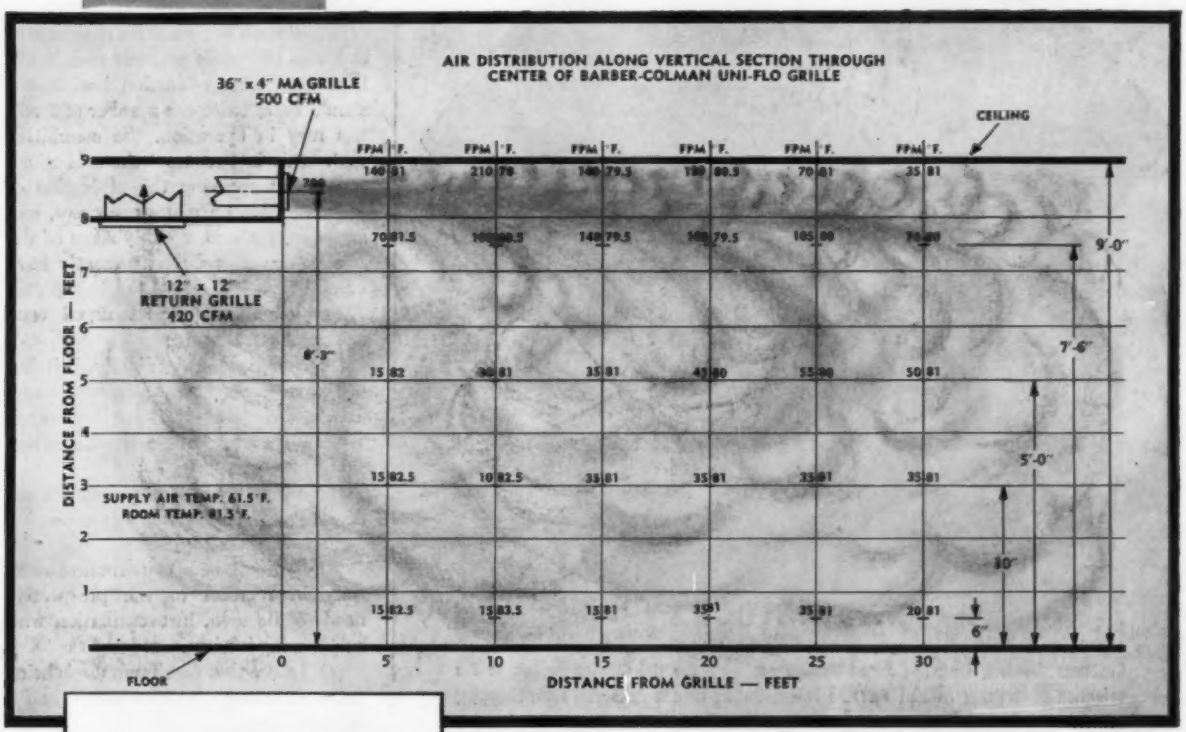

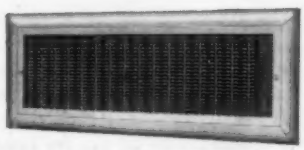

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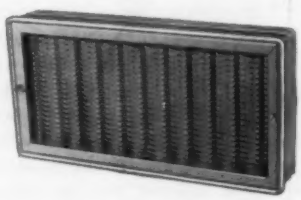

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THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 46)

dent's Committee on Education Beyond the High School.

The nation's colleges and universities should be preparing themselves right now to handle twice the present three million enrollment by 1970, in the opinion of the Committee, which made its second report last month and will make its third and concluding report later this year.

Preparation for some six million students in 1970 does not, however, mean that the higher education institutions should build twice the number of facilities now in operation, the committee said. This is because "there is much room for improving the utilization of existing space on many campuses, and many institutions, notably some of the smaller private colleges, presently have unused capacity."

The committee report urged each existing institution to:

(1) Undertake immediately, if it has not already done so, an intensive and imaginative study of its long-range goals and plans, with particular attention to its future size.

(2) Avoid physical expansion at the expense of diverting funds from needed faculty salary increases.

(3) Plan all new construction carefully in relation to the prospective needs of its area, in coordination with neighboring institutions.

(4) Insure that maximum use is being made of present facilities before building new ones.

Optimum use of available facilities may require substantial changes in academic calenders, time schedules and procedures, it was pointed out, but the inconveniences of such changes will be a small price to pay for better salaries, better quality of education, and for serving more students.

Single communities and groups of neighboring communities were encouraged by the committee to consider establishing new two-year colleges as a partial solution of the short age problem. It warned, however, that these should not be viewed as providing a panacea for relieving the current pressures on four-year colleges. On the contrary, they would accelerate the overall increase in enrollments, demand for teachers and need for funds, it stated.

In addition to the grants-in-aid program, the committee recommended:

(Continued on page 376)

ARCHITECTURAL RECORD

WESTERN SECTION

Western Editor: ELISABETH KENDALL THOMPSON, A.I.A.
2877 Shasta Rd., Berkeley 8, Calif.

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FACADISM — OR ARCHITECTURE?

RECENTLY A PUBLIC BUILDING for one of the West's great cities was under discussion in the newspapers of the locality. A sketch of one elevation of the new building had been released and had immediately caused a loud hue and cry. "Dull," "monotonous," "unimaginative," shouted one side. "Plain and functional," triumphantly shrilled the other. "Functional but dull," the first group admitted.

Who was doing the shouting? Architects? Ah, no. These were not the design professions standing firm on their convictions, but the gentlemen of the press, the city fathers, the politicians, bandying words whose meaning they could not define, expressing opinions arrived at after only a hasty perusal of one sketch for one side of an important new building.

And where was the general public, the patient, tax-paying, bond-passing public in all of this? It was caught between the two groups, unequipped with the knowledge to contradict either one, vaguely apprehensive that if one group prevailed the building would cost more money, only half-sure that "functional" meant efficient and very much afraid that it meant the worst of "modern" architecture.

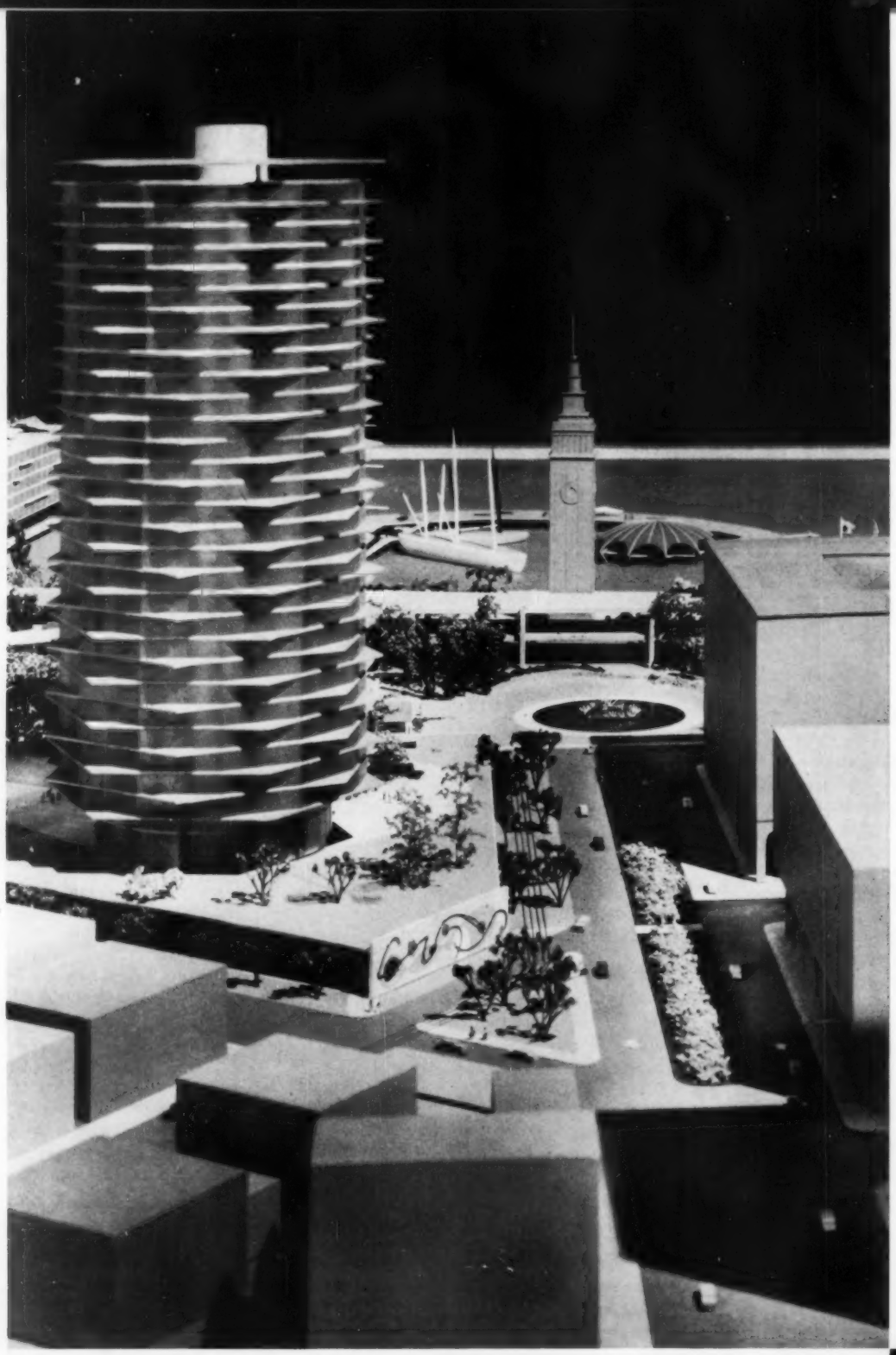
And well it might be half-sure and afraid, for there was no voice raised to ask how the exterior of a building could be "functional" and to request a review of the building's plans. Not once was there a clarification of the architectural design process, the inextricable weaving together of the building's outward appearance, its inward efficiency of operation and its structural safety.

To have so judged a building was to put a premium on façadism, not architecture. But for the average person there was, in this instance, no distinction between these fundamentally opposed concepts. To say that façadism is the ultimate in architecture — and fortunately it would be hard to find an architect today who would argue for such a definition — is to say that beauty is, after all, only skin deep. It is to settle for the least, when the most is within reach.

Because there is no easy way to elevate the criteria of the general public, and because for most people the way a building looks on the outside is its most important aspect, and because out of the vast numbers of buildings in this country only a few qualify as architecture, any change in the public demand for good design will come slowly. This slow change is only partly due to a basic human unwillingness to change; it is due also to a lack of guidance and direction from those who have the knowledge and the sensitivity to raise the standards of design.

Architects are understandably hesitant about condemning openly the work of a fellow professional, but they need not be hesitant in exposing the fallacy of an erroneous definition of architecture and the shallowness of substituting facadism for architecture itself.

E.K.T.



Survivor of 1906 quake, symbol of city's early dependence on water transportation, Ferry Building's Tower would remain at foot of Market Street, with freeway and park on one side, historic ship harbor on other. Removal of Ferry Building wings would permit view through freeway to Bay

Ferry Park project and Golden Gateway, redevelopment of Produce District and lower Market Street (left) connect to form unified proposal for redesign of San Francisco's "front yard" despite two-deck freeway along Embarcadero

Flanking marine park are super-pier (left) for ocean liners, with restaurant and parking on roof, and world trade center (right) also with roof restaurant: heliport in Bay adjoins it. Tall building would be part of Golden Gateway redevelopment

FERRY BUILDING PARK: DESIGN FOR COMMODITY AND DELIGHT

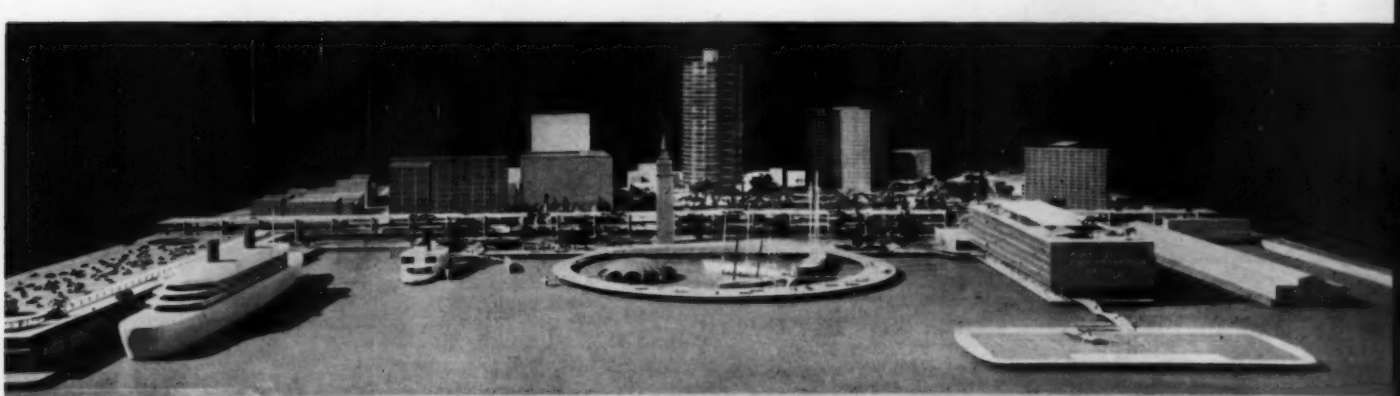
ALTHOUGH SAN FRANCISCO lost its fight a year and a half ago to prevent construction by the state of California of a two-deck freeway directly in front of the venerable and cherished Ferry Building at the foot of Market Street, it never lost hope that something of beauty could be created around the old landmark despite the ruthless intrusion of the freeway. Last month a bold and beautiful plan was unveiled by the City Planning Commission which showed how the area could be redesigned as a complementary project to the previously announced Golden Gateway redevelopment area.

Designed by Mario Ciampi, San Francisco architect, and his associate, Allyn Martin, the plan envisions a park on either side of the Ferry Building — one a marine park with a pier for passenger liners at one side, a World Trade Center building on the other and between these a circular pier where historic ships could be moored, a ferry slip, a small boat landing pier and a heliport; the other a landscaped area at the foot of Market Street which would flow south toward access ramps for the freeway (and so influence their approach), and north to the Golden Gateway project.

The heart of the plan is the proposal to remove both wings of the Ferry Building, leaving the tower as a memento of the days when thousands of commuters entered the city through the Ferry Building and as a focal point for the city's waterfront. Removal of the wings would permit a view through the freeway's decks, mitigating to some extent the blighting effect of the freeway structure.

Pedestrian underpasses with moving sidewalks would provide safe crossing of the surface trafficways along the Embarcadero, and paintings along the walls of the underpasses would tell the city's history.

Cost of carrying out the Ferry Park project would be approximately $100,000,000, most of which would come from private developers who would acquire property in the area and build apartment and office buildings. Cost of Ferry Park and the Golden Gateway project, designed by Skidmore, Owings and Merrill on commission from the Blythe-Zellerbach committee, for redeveloping the city's Produce District would come to an estimated $280,000,000. The park itself, however, exclusive of surrounding buildings, could be begun with a $4,000,000 fund, half of which would be appropriated by the city for development of property it already owns in the area, and the other half could come from the California State Park Commission which has available a $2,000,000 fund from the tidelands moneys for allocation to a San Francisco park project. Since the Commission strongly opposes the Embarcadero Freeway now being built, approval and funds are not expected to be obtained easily.



WESTERN BUILDINGS IN THE NEWS

Denver: Bank Building

Denver's new 29-story First National Bank building is due to be finished by next spring. Bank will occupy first four floors and most of basement. Raymond Harry Ervin and Associates, Denver, are architects; Pereira & Luckman, architects and engineers, are designers of fixtures and bank interiors

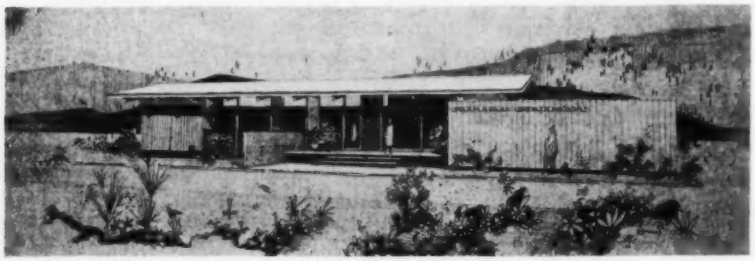
Seattle: Office Building

Seattle's first new office building in over 25 years will be a 16-story office tower on a four-story platform to be built in downtown business district. Construction will start early next year and is scheduled for completion by mid-1959. Jones and Bindon, Seattle, are architects; Skidmore, Owings and Merrill, San Francisco, are consultants

Anne Knorr, del.

Squaw Valley, Calif.: Spectator Centers

Spectators at the 1960 Olympic Winter Games in Squaw Valley, Calif., will lounge, eat and warm themselves in two identical spectator centers. Window walls on three sides overlook mountains and sports area. Corlett and Spackman, Kitchen and Hunt, Architects Associated



Covina, Calif.: Administration Building

First structure in a development which eventually will be a complete new city is this administration office for the Capital Company at its 8000-acre Diamond Bar Ranch property near Covina, Calif. C. M. Deasy, architect, designed the office

Hollywood: Additions to Television City

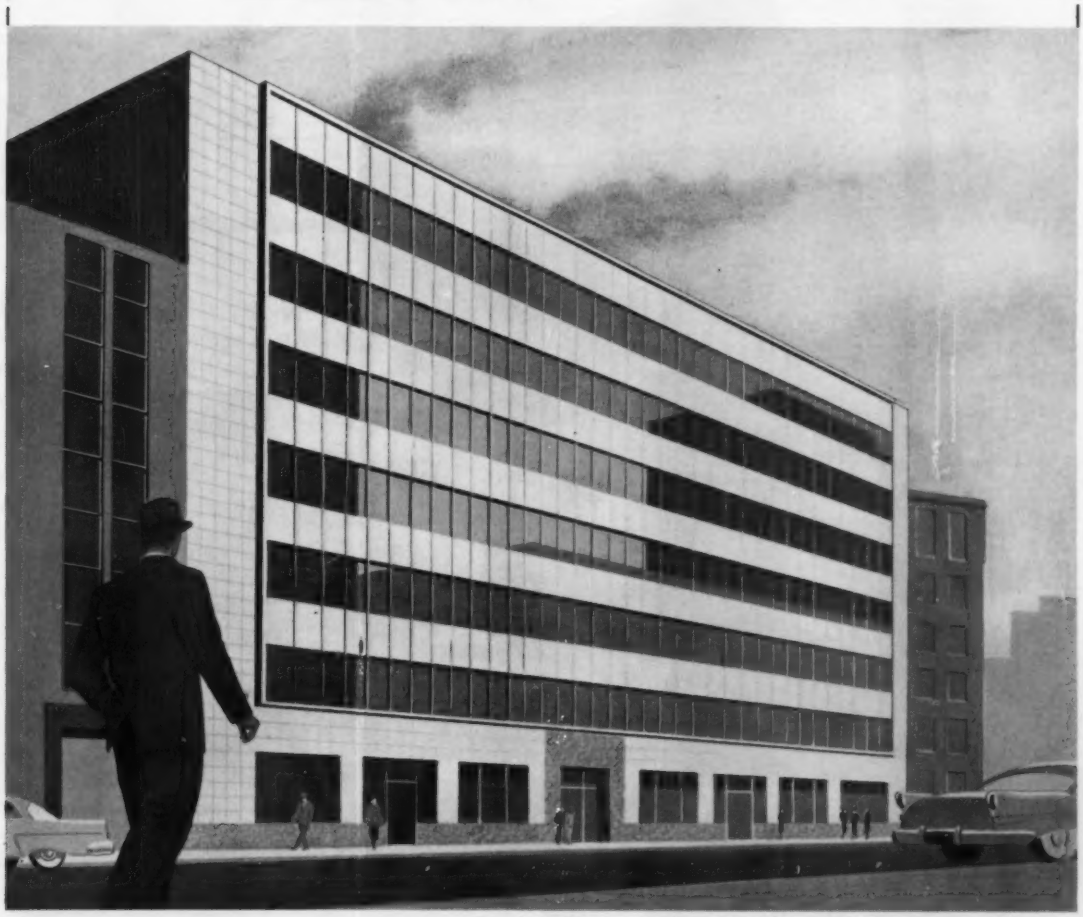
Additions to CBS Television City, Hollywood, now under way, will be complete by the end of 1958. Included in project are eight-story administration building and expansion of production center. New studios will be largest built so far for TV. Pereira & Luckman are architects and engineers

Designed by — Ashley, Keyser & Runge, AIA

Consulting Architects — Meyer & Evers

Constructed by — Cahill Brothers, Inc.

Interior — WEBERWALL by Weber



Standard Oil Corporation of California Headquarters, San Francisco

The Standard Oil Corporation of California has chosen an all steel WeberWall interior for their new six floor headquarters building at Pine and Market Streets in San Francisco. Like so many other progressive companies, Standard is looking to the future, toward expansion or other inevitable changes. They realize a WeberWall interior of movable steel partitions will serve them well, through any necessary future changes.

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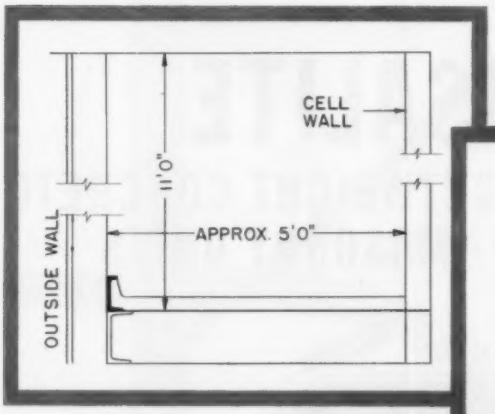
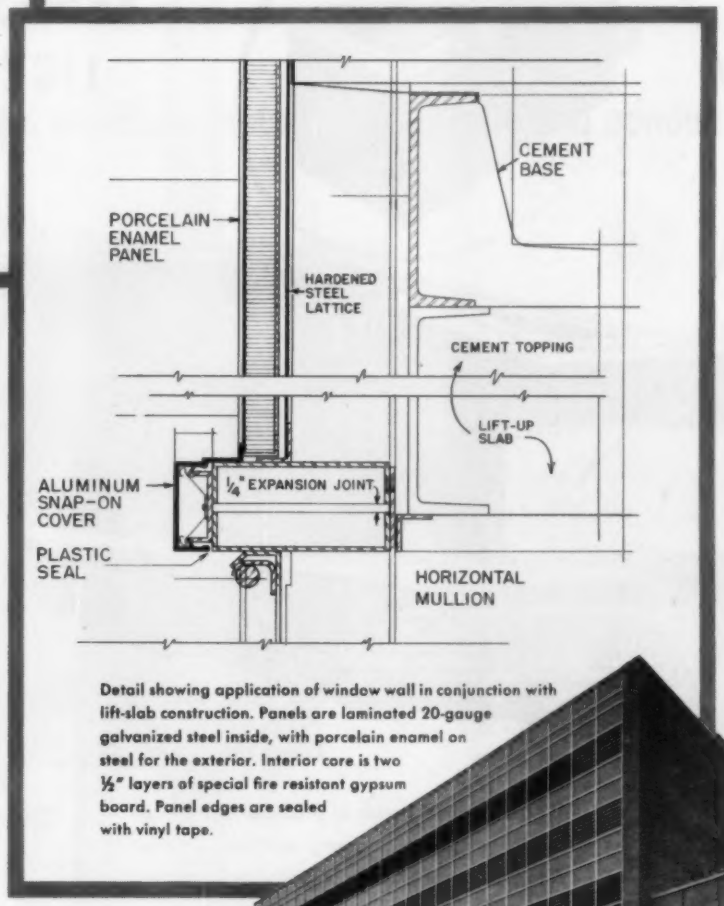
THE "New Look" IN JAILS... ARCHITECTURAL PORCELAIN ENAMEL





Detail showing application of window wall in conjunction with lift-slab construction. Panels are laminated 20-gauge galvanized steel inside, with porcelain enamel on steel for the exterior. Interior core is two ½" layers of special fire resistant gypsum board. Panel edges are sealed with vinyl tape.

No cold, gray, "penal institution" look for *this* county jail. To the passerby, it appears to be an especially handsome office building. Instrumental in this "non-jail" effect is the liberal application of colorful panels of architectural porcelain enamel. This eye-catching window wall protects a five-foot-wide corridor between it and the cell blocks.

Lightweight panels of porcelain enamel on steel have wonderfully wide adaptability for varied building ideas. Remarkable lightweight minimizes dead load, and promotes economical erection speed. For durability they are unsurpassed; brilliant colors, as varied as the spectrum, are permanently unfading; finishes retain original freshness for decades on end.

SACRAMENTO COUNTY JAIL, Sacramento, California
Architect: Harry J. Devine, A. I. A., Sacramento, California
General Contractor: Stolte, Inc., Oakland, California
Window Wall Contractor: C. E. Toland & Son, Oakland, California
Panel Manufacture: Architectural Porcelain Constructors, Oakland, California

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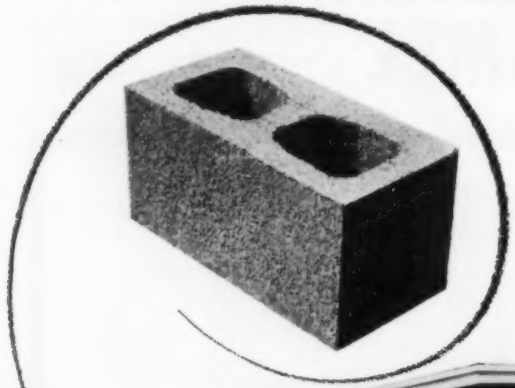
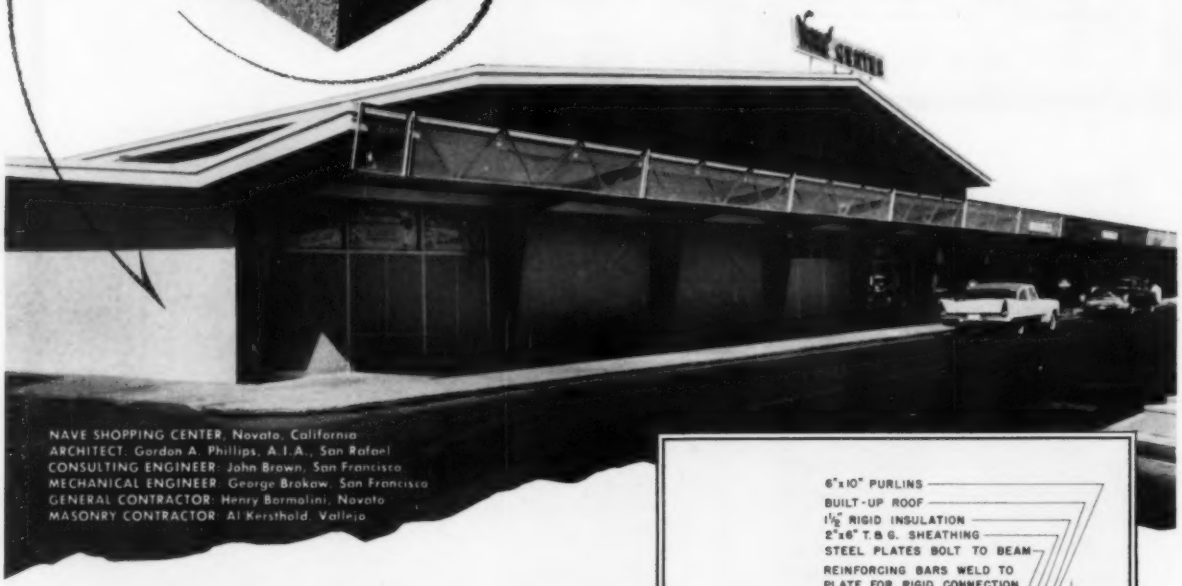
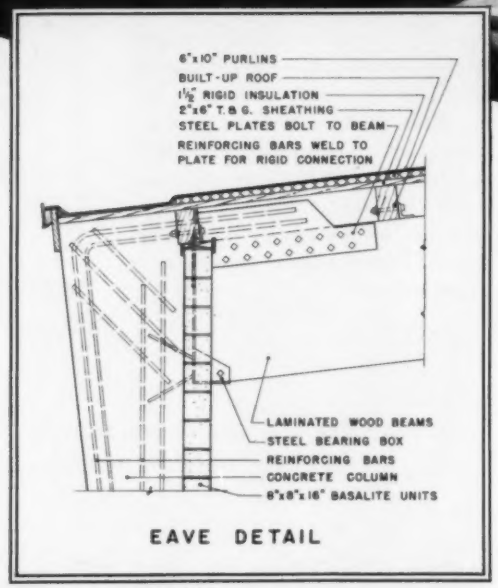


BASALITE
LIGHTWEIGHT CONCRETE MASONRY UNITS



NAVE SHOPPING CENTER, Novato, California
ARCHITECT: Gordon A. Phillips, A.I.A., San Rafael
CONSULTING ENGINEER: John Brown, San Francisco
MECHANICAL ENGINEER: George Brokaw, San Francisco
GENERAL CONTRACTOR: Henry Barmolini, Novato
MASONRY CONTRACTOR: Al Kersthold, Vallejo



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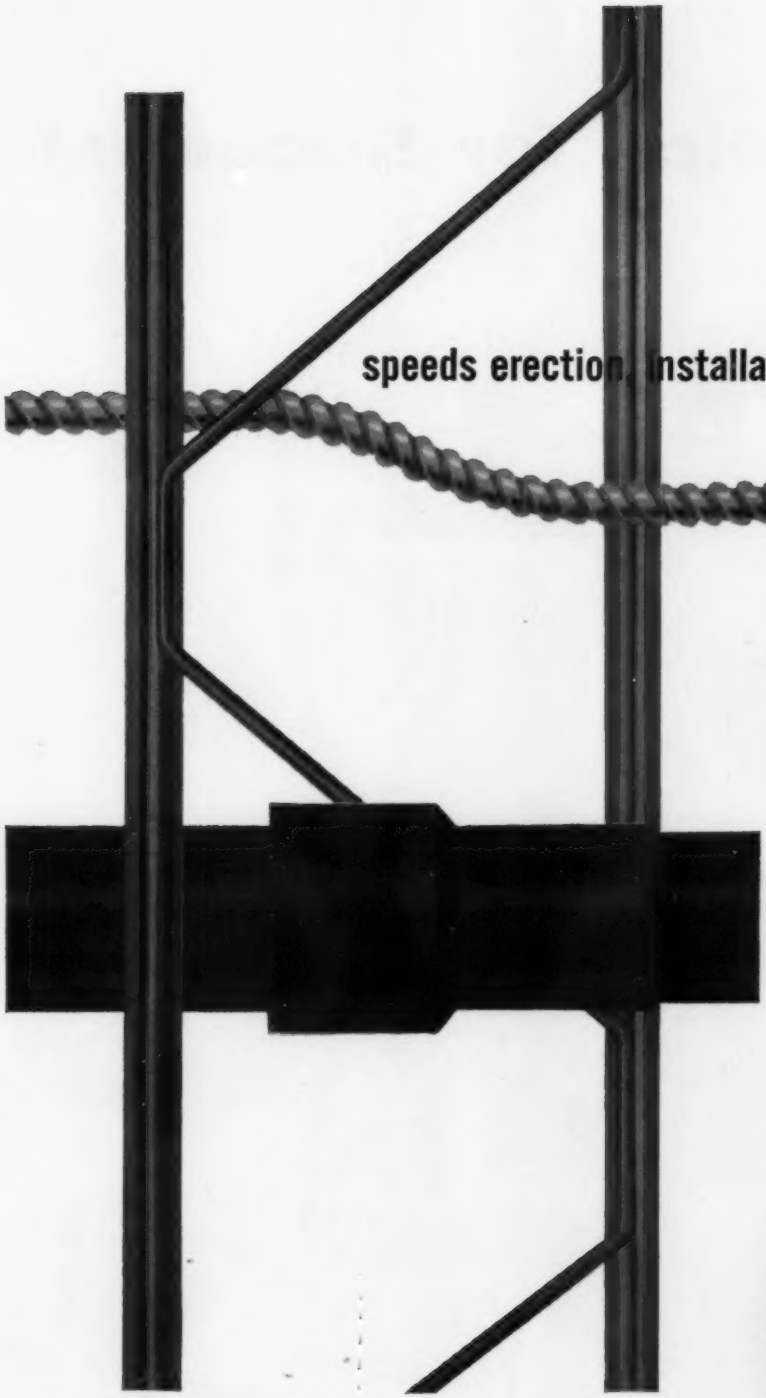

This time-saving and cost-cutting steel stud design was pioneered and perfected by Soulé. It features wide web openings for faster installation of pipe and conduit. The Soulé design also makes the stud easier to handle on the job—hand cutting is faster, speeding erection. Soulé steel stud is available in 2″, 3¼″, 4″, and 6″ widths. Call your nearest Soulé office for complete specifications and details.

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Seattle 4100 West Marginal Way, HOlly 3600
Spokane East 41 Gray Ave., Riverside 7-8063
Phoenix 2026 South 11th Avenue, ALpine 3-3178
Salt Lake City 220 Greyhound Bldg., EMpire 3-7728

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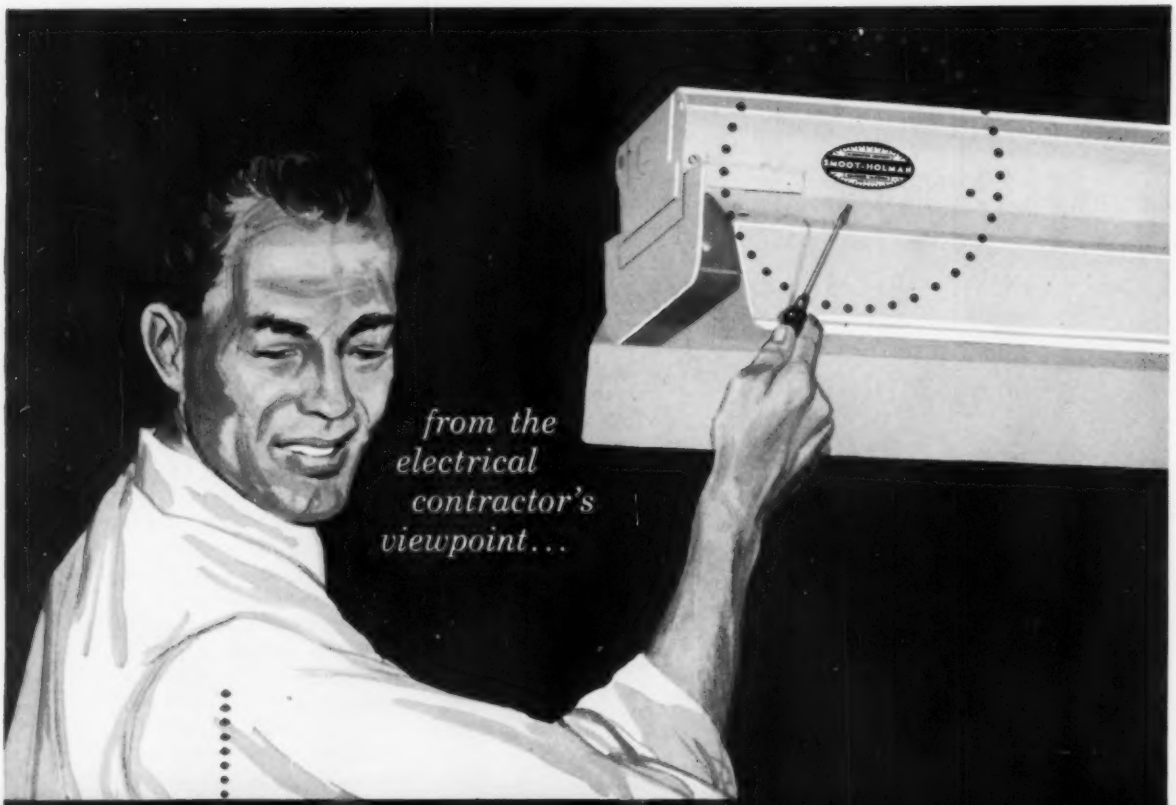
San Diego 1975 Fifth Avenue, BEImont 2-1071 • Portland 2630 N.W. St. Helens Road, CApitol 3-5154
Seattle 4100 West Marginal Way, HOlly 3600 • Spokane East 41 Gray Avenue, Riverside 7-8063
Phoenix 2026 South 11th Avenue, ALpine 3-3178 • Salt Lake City 220 Greyhound Building, EMpire 3-7728
Dallas 528 Interurban Building, Riverside 1-5225



from the electrical contractor's viewpoint...

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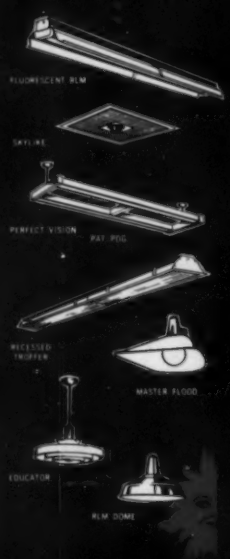

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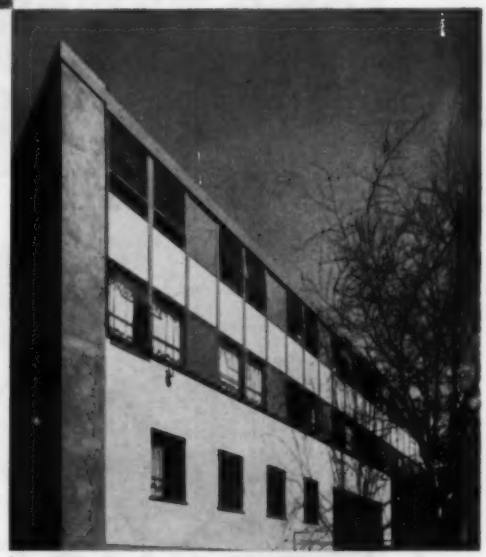

Illustrated: Ariston steel curtain walls with insulated panels.
Phi Kappa Sigma Fraternity, Berkeley, California.
F. P. Lathrop Construction Co., Contractors
Ratcliff and Ratcliff, Architects

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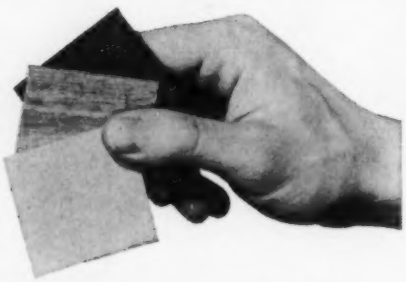

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ROCKEFELLERS SPONSOR RAINIER PARK STUDY

A study to determine the feasibility of providing overnight accommodations at high-level points within the boundaries of Mount Rainier National Park will be financed by the Rockefeller interests and may lead to the Rockefellers' "direct concern in the construction or operation of any recommended facilities," according to Laurence Rockefeller. He emphasized, however, that his family's assumption of the $25,000 cost of the study does not imply "commitment or obligation to carry the matter further."

The park's present facilities at Paradise Valley and Sunrise are badly in need of repair and rehabilitation. An exceedingly short season — six weeks in summer — complicates the problem of operating the facilities at a reasonable profit and providing enough funds for the repair work. The National Park Service has taken the official stand that it does not recommend operation of any high-level overnight accommodations inside Rainier Park, thus threatening the future operation of even present facilities.

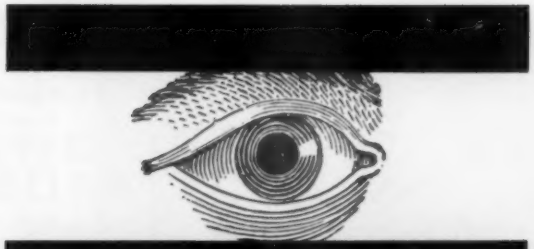
The Rockefeller interests have been responsible for development of a large hotel at Grand Teton National Park in Wyoming and other accommodations in Virgin Islands National Park. The study of the problem at Rainier was undertaken, according to Laurence Rockefeller, because of his family's "long-standing interest in the dual problem of conservation on the one hand and public use of national parks on the other, and because we felt that a study of this problem by outside business experts might be helpful."

SEATTLE EXPANDS AREA FOR 1960 WORLD'S FAIR

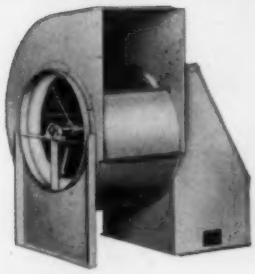
A new land acquisition program which would give the Washington State World Fair Commission a 90-acre site for its 1960–61 Fair has been endorsed officially by Governor Albert Rossellini and the state Attorney General's office. The endorsement carries with it $2,500,000 in funds for acquisition of land, a sum equal to that which the city has already appropriated as its part in the project which will eventually provide a site for a new civic center.

Most of the property which the state will acquire is to the south and west of the area already designated by the city for the civic center. Condemnation proceedings and purchase of property are

(Continued on page 48-16)



A NEW LOOK AT "THE FORGOTTEN FAN"



Up on the roof, "the forgotten fan" is out of sight, out of mind . . . until wind, rain, snow and sleet cause costly breakdowns due to exposure and lubrication neglect. In the past when the heart of a blower was broken by weather, there was nothing for it but to repair or replace.

Today, after a searching look at roof blowers, Utility has a more practical answer: a complete line of quality engineered Enclosed Drive Blowers designed for punishing outdoor duty.

Every one has motor and drive completely enclosed for positive protection against dirt, moisture and drastic temperature changes. Permanently sealed, pre-greased ball bearings forever prevent breakdowns due to maintenance neglect.

Best news of all: you pay no premium for this superior performance, due to Utility's progressive production techniques. So, if you think it's high time for a new look at blowers for roof installations, be sure to take a good look at the Utility line . . .

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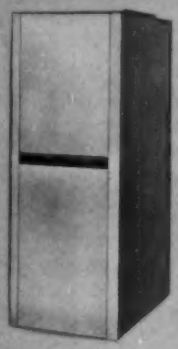

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SEATTLE FAIR AREA

(Continued from page 48-14)

expected to take about one year. Construction is due to get under way as soon as possible thereafter so that the fair can open by the summer of 1960.

The two commissions — for the World Fair, and for the Civic Center — have $5,000,000 each to spend on site preparation, buildings and landscaping.

PORTLAND STUDIES FIRST URBAN RENEWAL PROJECT

A plan for renewal of an 83.5 acre section of Portland has been presented to the city council by the city's planning commission. The area under study is south of the auditorium, and surrounds one of the sites which was considered for the Exposition-Recreation Center. Target date for completion of the project is 1963.

Further planning for the project awaits the city council's approval of the tentative plan and its agreement to pay one-third the net cost of acquiring land and developing streets and sewers.

CALIFORNIAN TO BUILD SOLAR ENERGY CENTER

A solar energy center where even the street lights will be powered by solar batteries and well water will be supplied by solar pump, is to be built in California on a townsite near San Diego, according to the Association for Applied Solar Energy. The smog and fog free site, 3800 ft above sea level, is owned by a southern California management consultant, J. Y. Leveque, who is sponsoring the project. He is being backed by a number of Eastern businessmen who will help to obtain contracts, from government agencies and from industry, for research and development of solar energy applications.

Purpose of the center is to find practical applications of the sun's power. Included in the plans are construction of a model solar house, a sun furnace to provide temperatures up to 6000 deg F, and an investigation into methods of using solar energy for conversion of sea water to fresh water.

MENTAL HOSPITAL PLANS OKAYED IN OREGON

The first unit of Oregon's new mental hospital is due to get under way shortly, when quarters for hospital personnel will be built. The hospital, eventually to provide 1500 beds, is estimated to cost $16,000,000. The present work will come to approximately $6,000,000.

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BOURNE DIAMOND PATTERN WINDOWS FOR DISTINCTIVE CHARM

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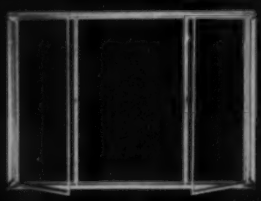
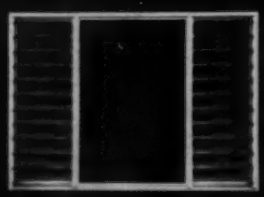
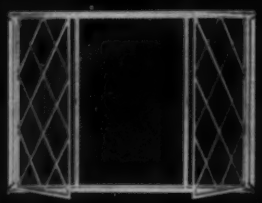


Bourne Aluminum Casements in a wide range of stock sizes.



Bourne Aluminum Jalousies for windows breezeways, porches.

Bourne Town & Country Windows for modern ranch house styling.



Bourne Diamond Patterns bring Old-World charm for modern homes.

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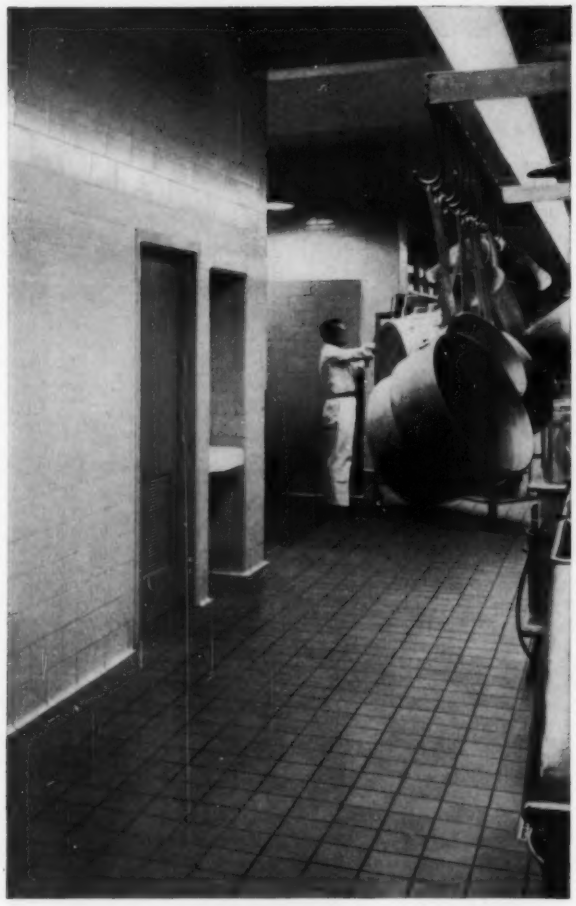

Agnews State Hospital, Agnew, California
Architect: California Division of Architecture

YOU CAN "FEEL" THE CLEANLINESS

It was almost mealtime (4:30 P.M.) when this photograph was taken. Yet, every inch of this Agnews State Hospital kitchen was as spotlessly clean and smooth as a cup on your own table at home. The time and effort it takes to keep this kitchen clean are surprisingly little, because of the use of tile. Walls of Kraftile Glazed *Structural* Tile are impervious to grease, smoke, acids and food stains. They wipe clean with one stroke, never need patching or painting. Installed cost is clearly competitive because Kraftile combines both wall and finish. Masons do the complete installation in minimum time. Wherever sanitation is important in your jobs, consider the practical beauty and economy of Kraftile, and its easy upkeep. Clear glaze plus 12 harmonious colors in standardized sizes and shapes. For complete information including graphic standards and specifications, write

KRAFTILE COMPANY

NILES, CALIFORNIA

WAR HOUSING CITY TO BE REDEVELOPED

Marin City, whose war housing units have been familiar landmarks on the hills above Sausalito, Calif., for 15 years, is to be redeveloped into a real town which will include a nine-acre commercial center, a community center, three churches and an elementary school.

The war housing units, always called "temporary," will be replaced by a 300-unit low-rent project to be partially financed by Frederal funds. The new project will not be on the hills but will be built on 30 acres of land at the southern edge of the city's boundary. John Carl Warnecke and Aaron Green are architects for the new housing.

Other housing will also be built, but will be financed under the Federal Urban Renewal Act. One-family houses and apartment buildings will be located on 165 acres available for this phase of the project.

The city's property along the ridge of the hill will be developed as lots for more expensive houses. This land has not previously been built on because it was inaccessible.

Construction on the first phase — the new Federal-aided housing project — will begin next January.

OIL FUNDS OKAYED FOR FINE ARTS PALACE

A long fight to save Bernard Maybeck's Palace of Fine Arts, sole relic of the Panama Pacific International Exposition of 1915, has been successful at last. A bill submitted by Assemblyman Caspar Weinberger, in whose constituency the Palace stands, was signed practically at the last possible moment by California's Governor Knight.

The bill provides that $2,000,000 in state funds (from the tidelands oil money, now specifically earmarked for development of the state's beaches and parks) shall be appropriated when and if the city of San Francisco or private sources match this sum for development of the site as a park and for rehabilitation of the buildings. San Francisco's share can be contributed over a period of years.

The 13.5-acre site and the Palace itself will become a part of the State Park system. Various proposals have been made for use of the building when it is restored, including plans for making it an exhibition hall and for using it as a recreation center. Just how it would be restored, and what its use would be has not yet been determined finally.

The building has long been in a dangerous state of decay. Since it was built as a temporary structure for the exposition, there has been considerable debate as to whether or not it should be "restored" or torn down.

PORTLAND AIRPORT NEARS HALFWAY POINT

Portland's new $4,250,000 airport terminal is almost half done, and progress on all aspects of the work indicates that it will be opened for use by midsummer of 1958. Most of the building's structure has been completed; only the 106-ft tower has yet to be erected.

When completed the terminal will be capable of handling 1,000,000 passengers a year, but the problem of the airport manager involves handling of visitors as well. Some 750,000 persons per month are expected to pass through the building — a ratio of about 10 visitors for every passenger. Sixteen gates will provide access for passengers. Provision has been made to expand this number to 34 when necessary.

Apparelled in celestial Light

Architects: Pereira & Luckman, Los Angeles
Contractor: William Simpson Construction Co.

CURTAIN WALLS

fabricated and erected by A. J. Bayer Company

The imposing exterior of CBS Television City in Los Angeles demonstrates that "show business"—like any business—is founded firmly on practical purpose. For here the glittering world of make-believe achieves a functional facade of steel curtain walls custom crafted and erected by A. J. Bayer Company.

Craftsmanship in the design, fabrication and erection of architectural metal work has been an A. J. Bayer specialty since 1902. All Bayer installations are noted for their structural soundness and durability to assure weathertight protection, year-around comfort and lasting beauty. That's why builders and architects depend on A. J. Bayer for quality custom-made architectural metal products in aluminum, bronze, brass, stainless and mild steel.

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CALIFORNIA CAN RELAX ON SCHOOLS, CHAMBER SAYS

California's rate of school construction can be slowed down, says the Council of State Chambers of Commerce, which conducted a survey to determine the state of school building needs in the United States.

As of September 1956, California needed 10,000 additional classrooms, but by 1961 this figure will have grown to 34,558 because of increased enrollments in the four-year period. Based on an anticipated capital outlay rate of $325,000,000 a year (from outlay of the latest two years previous), the Chamber expects that 31,958 classrooms would be built between September 1957 and September 1961. Since some 10,000 classrooms are due to be finished this month, the survey states that the total number of classrooms which would be completed by 1961 at the present rate of construction would exceed the need by 7400.

PRIVATE INDUSTRY'S FIRST REACTOR STARTS WORK

The power reactor at General Electric's Vallecitos Atomic Laboratory, Pleasanton, Calif., achieved criticality — sustained a chain reaction for the first time — early in August and was to be running at full power sometime during September. It will supply heat which will be converted into 5000 kw of electric power for transmission over the power lines of Pacific Gas & Electric Co.

Earlier, the reactor at the joint Atomics International-Southern California Edison Company project in the Santa Susana mountains near Los Angeles, went critical. The Santa Susana reactor is a venture being carried on under the AEC's experimental program. It is a sodium graphite reactor — a different kind from the General Electric reactor which is of the boiling water type — and is due to develop power amounting to 7500 kw.

FUND WILL HONOR EARLY WOMAN ARCHITECT

A fund amounting to almost $15,000 has already been accumulated as a memorial to Julia Morgan, one of California's most prolific residential architects and a distinguished member of the small group of early architects whose work led to the much heralded work of the San Francisco Bay area. The fund will be used as the nucleus of an endowment "to assist undergraduate students in architecture" and to establish graduate fellowships in architecture at the University of California. Miss Morgan died last February.

Two friends of the pioneer woman architect initiated the fund. They were Else Schilling and Johanna Volkmann of San Francisco. Contributions to the fund may be made through the Regents of the University.

LEASE-PURCHASE END KILLS WESTERN PROJECTS

The expiration of the lease-purchase act ended hopes that the large Federal buildings planned for Western cities might get under way in the foreseeable future, although General Services Administration officials said that the end of the program would not "automatically invalidate" any projects that had been approved by the Public Works Committee.

However, since construction costs have increased in recent months, and since many Federal agencies have revised their space needs upward, it is more than likely that even if the

(Continued on page 48-26)

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WRIGHT WILL DESIGN MARIN COUNTY CENTER

Frank Lloyd Wright has been engaged to design the new $8,000,000 county center for Marin County, the county just north of San Francisco which, as Wright said on arrival there last month to sign the contract, has "almost everything." His selection as architect for the project came after considerable opposition had been voiced by residents who favored selection of a local architect.

After signing the contract, Wright spoke to 600 persons who had crowded the San Rafael High School auditorium to hear him. What he had to say did not disappoint them; his speech was as colorful and controversial as ever.

The buildings for the new center, he said, "must last at least 300 years, so we will have to look ahead in designing them. They must express the natural beauty of Marin County, and they must not hurt the land."

The site chosen for the new center especially pleased him. It is a rural site north of the county seat, San Rafael, with ample room for the buildings contemplated. After the controversy over the capitol building for the state of Arizona — for which Wright proposed a domed and towered building on a site some 15 miles outside the city of Phoenix "with lots of space around it" — the amplitude of the Marin site was particularly gratifying, he said.

Turning from the specific to the general, Wright remarked that "architecture is the blind spot of the nation," and answered a question as to how to prevent the building of ugly buildings with the charge to "get rid of the 50- and 100-ft lots — abolish the realtor" (though he suggested no means for doing so), and added "and there's always the atomic bomb."

He warned the Marin residents that the new center should be harmonious with the beauty of its site "even though it may not accord completely with the ideas of some of the county's chief citizens. Throw the fellows out of office who stand in your way," he urged. "The common man believes only in what he can see and he can see only what he can put his hands on. But this common man is nevertheless dependent on the uncommon man for leadership."

The building program for the center is expected to take 10 years, but Wright expects to have plans ready for start of construction within the next 20 months.

STATES EXPAND PROGRAM FOR STATE COLLEGES

California and Colorado, two areas where population increases have been heavy, are looking ahead to their needs at the higher education level and are providing for expanded state college programs. California's last legislature approved a fund of $5,600,000 for site acquisition in nine areas, and Colorado is continuing to enlarge its facilities at Fort Collins (formerly Colorado A. & M., now Colorado State University) and its new college campus at Durango (Fort Lewis A. & M. College).

The counties to be included in California's program are Southern Alameda, Orange, San Bernardino-Riverside, Stanislaus, Napa, Solano-Sonoma-Marin, Contra Costa, San Mateo, Kern and Monterey-Santa Cruz. Originally the bill had asked for $4,300,000 to obtain sites for and start construction on colleges in Alameda, Stanislaus, Orange and the Napa-Sonoma-Solano-Marin areas. Although no limit has been set in the bill as enacted on the amount any one area would get, it is expected that no college will get less than $500,000. The new colleges will provide the last two years of a four year college course.

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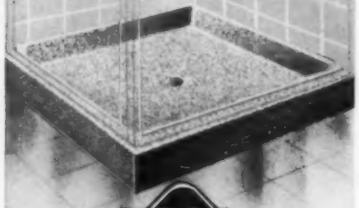

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WASTE SPACE

The Use of Travel

The World Conference on Prestressed Concrete, held last month in San Francisco, brought numbers of distinguished engineers to San Francisco, many of them for a first time visit to the United States. But if they know our country little, they know the European countries well, and some draw inspiration from more than the scenery.

One of these is Prof. A. M. Haas of the University of Delft whose thin-shell buildings have interested and delighted Europeans for a long time. Every year Professor Haas visits Italy because, he says, "I must. There I reassure myself. There the people care about beauty in buildings; this is everywhere apparent. It is important to them that their buildings not only be strong, but that they should be *beautiful*."

Italy's buildings are indeed beautiful, and its cities have a beauty that is urban in character but with none of the inhumanity which is all too common an interpretation of the need to house many people on small acreage. There must be a reason for this, and perhaps the professor is right: if we cared more that our buildings should be beautiful, and if the *people*, not just the design professions, demanded that the buildings should give delight, perhaps we too could be known as a country of beautiful buildings. There are many things for which we are known and noted, but beauty in our urban scene is too rare to be one of them.

Most of the engineers at the Conference were bridge or highway engineers, but there was a core of structural engineers whose distinction made up for their few numbers. Felix Samuely of London, one of England's most sensitive and imaginative engineers (his article on "The Structural Engineer and Architecture" in the May RECORD should be required reading in both professions) was there; and Fritz Leonhardt of Germany, the designer of a remarkable concrete (prestressed, of course) television tower at Stuttgart; and Prof. Franco Levi of Torino, Italy, who has worked with Italian architect Morandi.

But the United States — and particularly the West — had distinguished representatives too. Nathaniel Owings of Skidmore, Owings and Merrill was moderator of the one session — on Prestressed Buildings — which came nearest to interesting the architect. Milo Ketchum of Denver, who has been working with thin shells and hyperbolic paraboloids and has been structural engineer for some of the most interesting of the Rocky Mountain area's new buildings; Ben Gerwick, new president of the Prestressed Concrete Institute. Conference chairman T. Y. Lin, professor of civil engineering at the University of California and an expert on prestressed concrete; Henry Layne, president of the Structural Engineers Association of California; and Walter Price, chief of the Bureau of Reclamation's Engineering Laboratories in Denver were among the West's engineers at the meeting.

Another visitor to San Francisco last month was Carl Koch, serving as a juror on *Sunset's* competition, and he found it an eminently rewarding visit in more ways than one. Back in Boston, he said, he could have 50 ideas he would like to try out, and that he would have to try to prove. But on his Western trip he had seen most of them tried out. Not only has he thus saved himself a lot of work but, although he didn't say so, he has pushed himself that much farther in advance of his earlier ideas. And of the West. But since we've *tried* them we can make advances too. It looks like as good a race as Mr. Koch could work up with his sailboat.

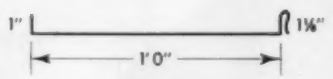
A Decade in the West

The September 1947 issue of ARCHITECTURAL RECORD included for the first time a new feature: the West Coast Section (later the Western Section) dedicated to "serving the architects and engineers of the West with the news, trends, problems and achievements of the region," as Ken Stowell, then editor of the RECORD, wrote in introducing it.

An innovation in the architectural magazine field, and a unique venture in the publishing world, the Western Section has grown and changed as the West has grown and changed. Some things about the content of the Section are unique in the field, too. For instance, its editorial page is the only month-in, month-out page of contemporary comment by members of the profession (as well as by the Section's editor) in any architectural magazine.

But whether we have fulfilled all the program Ken Stowell set up for us is not for us to say, but for you, the readers, to tell us. We hope you will.

E. K. T.



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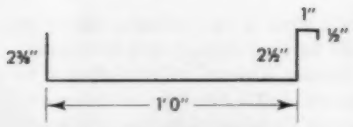

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UNITED STATES STEEL

LEASE-PURCHASE END *(Continued from page 48-20)*

funds were to be available, the projects could not now be built for their original estimated costs.

Among Western projects affected by this program expiration are the $45,000,000 courthouse and Federal office building for San Francisco (selection of whose site caused considerable controversy last year); a $30,000,000 customhouse and Federal office building in Los Angeles; and a $10,000,000 courthouse and Federal building in Sacramento.

PROFESSIONAL NEWS

Creative Design for Lower Costs

How to reduce costs through "creative design and engineering" will be the subject of a symposium sponsored by the Navy's Bureau of Yards and Docks to be held October 29 to 31 at the U. S. N. Civil Engineering Research and Evaluation Laboratory, Port Hueneme, Calif. Representatives of architectural and engineering firms and of technical societies have been invited to attend. The symposium will consist of six sessions, each devoted to a different aspect of the problem.

Speakers include Dean Harold Hauf of Rensselaer Polytechnic Institute, formerly ARCHITECTURAL RECORD editor; William L. Pereira, of Pereira and Luckman; Elliot Brown of Skidmore, Owings and Merrill; Richard Neutra; W. H. Scheink, executive director, Building Research Institute; C. M. Corbit, American Institute of Steel Construction; Professor J. E. Arnold of Stanford University. Navy representatives on the program include Capt. A. D. Hunter, District Engineer, San Diego; Capt. A. S. Elay, Director, Research Division, BuDocks; and Capt. E. J. Peltier, Commanding Officer, Construction Battalion Center.

Competitions

Art for "Mole Hall." San Francisco's underground exhibit hall, generally known as "Mole Hall," is to be embellished with some form of art as a result of the city's second competition for artists and craftsmen for design of a piece of work for a specific part of a city-owned building. The winner, to be selected during the Municipal Art Festival, September 26–29, will receive a $1000 award for his design and for the completed work. Last year's winner was Mark Adams, whose tapestry for the Marina Branch Library was installed this past summer.

A wall in the underground corridor between "Mole Hall" and the Civic Auditorium has been chosen as the area to be embellished. There are no restrictions on medium or theme, but only residents of the nine Bay area counties can compete.

The jury will consist of the Art Festival jury and representatives of the two architectural firms for the exhibition hall, Skidmore, Owings and Merrill and Wurster, Bernardi & Emmons. All entries will be on exhibition at the Festival.

Church Art Today. San Francisco's Grace Episcopal Cathedral will sponsor a juried exhibition of church art during the month of December to which all artists resident in the United States are being invited to submit entries. A jury, consisting of Thomas Carr Howe, director, California Palace of the Legion of Honor; Dr. Elizabeth Moses, curator, Decorative Arts, M. H. DeYoung Memorial Museum; and the Rev. Peter Boes, rector, St. Peters church, Redwood City, Calif., will select entries for exhibit and for purchase (up to a total of $400) by the cathedral. All entries, however, will be for sale.

Entry blanks and other information may be had from Registrar, Church Art Today, Diocesan House, 1055 Taylor Street, San Francisco.

CALENDAR OF WESTERN EVENTS

- September 26–29: Municipal Art Festival, Washington Square, San Francisco
- September 5–7: Western Mountain region, A.I.A., annual conference, Jackson Lake Lodge, Moran, Wyo.
- October 2–6: California Council, A.I.A., annual convention, and California-Nevada-Hawaii regional council meeting, Hotel del Coronado, Coronado, Calif.
- October 7–10: California Association of School Administrators annual conference and exhibition of school architecture, Long Beach, Calif.
- October 14–18: International Industrial Development Conference, Fairmont Hotel, San Francisco
- October 17–20: Northwest region, A.I.A., annual conference, Gearhart Hotel, Gearhart, Ore.
- October 17–20: California Council of Landscape Architects annual convention, Mark Thomas Inn, Monterey, Calif.
- October 29–31: Symposium, "Construction Cost Reduction Through Creative Design and Engineering," U. S. Navy Civil Engineering Research and Evaluation Laboratory, Port Hueneme, Calif.
- October 31-November 2: Structural Engineers Association of California annual convention, Hotel del Coronado, Coronado, Calif.
- November 13–15: Eighth national conference, American Standards Association, St. Francis Hotel, San Francisco
- December 1–22: Church Art Today, juried exhibition, Grace Episcopal Cathedral, 1055 Taylor Street, San Francisco

WESTERN SECTION

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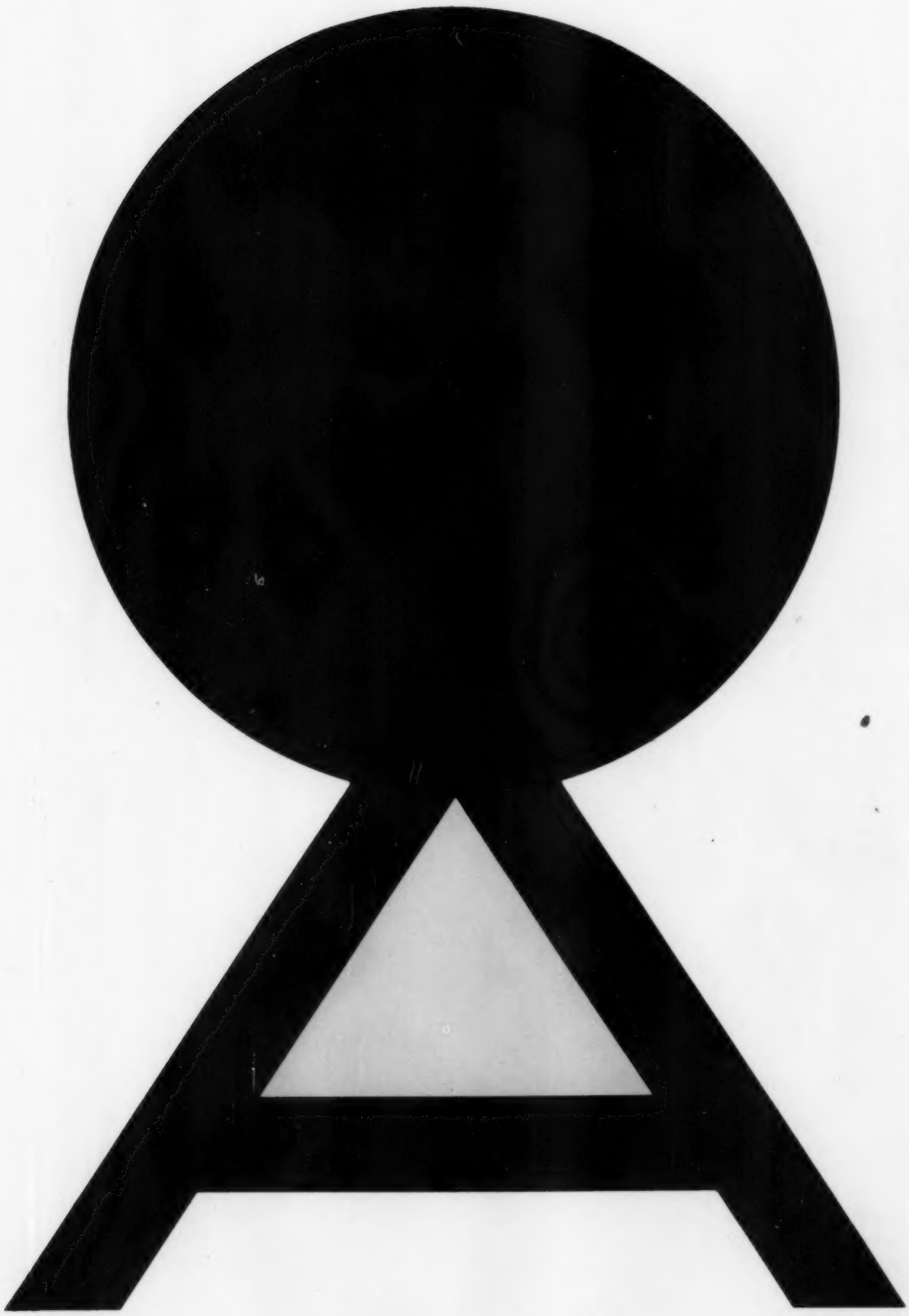

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NEW YORK

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.4	240.0
1950	256.2	254.5	249.5	251.5	248.0
1951	273.2	271.3	263.7	265.2	262.2
1952	278.2	274.8	271.9	274.9	271.8
1953	281.3	277.2	281.0	286.0	282.0
1954	285.0	278.2	293.0	300.6	295.4
1955	293.1	286.0	300.0	308.3	302.4
1956	310.8	302.2	320.1	328.6	324.5
Apr. 1957	316.5	306.5	329.8	341.8	335.4
May 1957	316.5	306.5	329.8	341.8	335.4
June 1957	316.5	306.5	329.8	341.8	335.4
	% increase over 1939				
June 1957	156.3	150.4	152.2	156.2	157.8

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
1950	194.3	196.2	185.4	183.7	185.0
1951	212.8	214.6	204.2	202.8	205.0
1952	218.8	221.0	212.8	210.1	214.3
1953	223.3	224.6	221.3	221.8	223.0
1954	219.6	219.1	223.5	225.2	225.4
1955	225.3	225.1	229.0	231.5	231.8
1956	237.2	235.7	241.7	244.4	246.4
Apr. 1957	239.4	237.7	245.2	248.3	250.4
May 1957	239.8	238.0	245.9	249.2	250.7
June 1957	239.8	238.0	246.1	249.4	251.6
	% increase over 1939				
June 1957	177.9	186.4	158.8	156.1	165.7

ST. LOUIS

1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
1950	232.8	230.7	221.9	225.3	222.8
1951	252.0	248.3	238.5	240.9	239.0
1952	259.1	253.2	249.7	255.0	249.6
1953	263.4	256.4	259.0	267.6	259.2
1954	266.6	260.2	263.7	273.3	266.2
1955	273.3	266.5	272.2	281.3	276.5
1956	288.7	280.3	287.9	299.2	293.3
Apr. 1957	288.6	280.4	290.1	301.8	296.3
May 1957	292.0	283.6	294.4	306.8	300.6
June 1957	292.6	284.2	295.9	307.8	303.4
	% increase over 1939				
June 1957	165.5	165.6	149.3	156.9	155.0

SAN FRANCISCO

1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
1950	227.0	223.1	222.4	224.5	222.6
1951	245.2	240.4	239.6	243.1	243.1
1952	250.2	245.0	245.6	248.7	249.6
1953	255.2	257.2	256.6	261.0	259.7
1954	257.4	249.2	264.1	272.5	267.2
1955	268.0	259.6	275.0	284.4	279.6
1956	279.0	270.0	288.9	298.6	295.8
Apr. 1957	283.5	272.8	297.7	308.4	303.8
May 1957	286.7	274.4	302.7	315.6	309.6
June 1957	287.3	275.0	303.5	316.2	310.2
	% increase over 1939				
June 1957	172.1	176.9	158.5	159.4	166.3

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

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Plumbing Fixtures by

RICHMOND

Central air conditioning... pressurized halls ... automated elevators... indoor parking service... terraces *and plumbing fixtures by Richmond* help Harrison Park set a new high in luxury living. The tallest apartment building in New Jersey reflects advanced ideas in modern design... utilizes the quality, styling and lasting beauty of Richmond fixtures to complement its outstanding decor.

Richmond has a place in your future plans, whether residential, commercial, industrial or institutional. Write for complete catalog or consult Sweet's Catalog File.

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Harlem Plumbing Supply Company, Inc.
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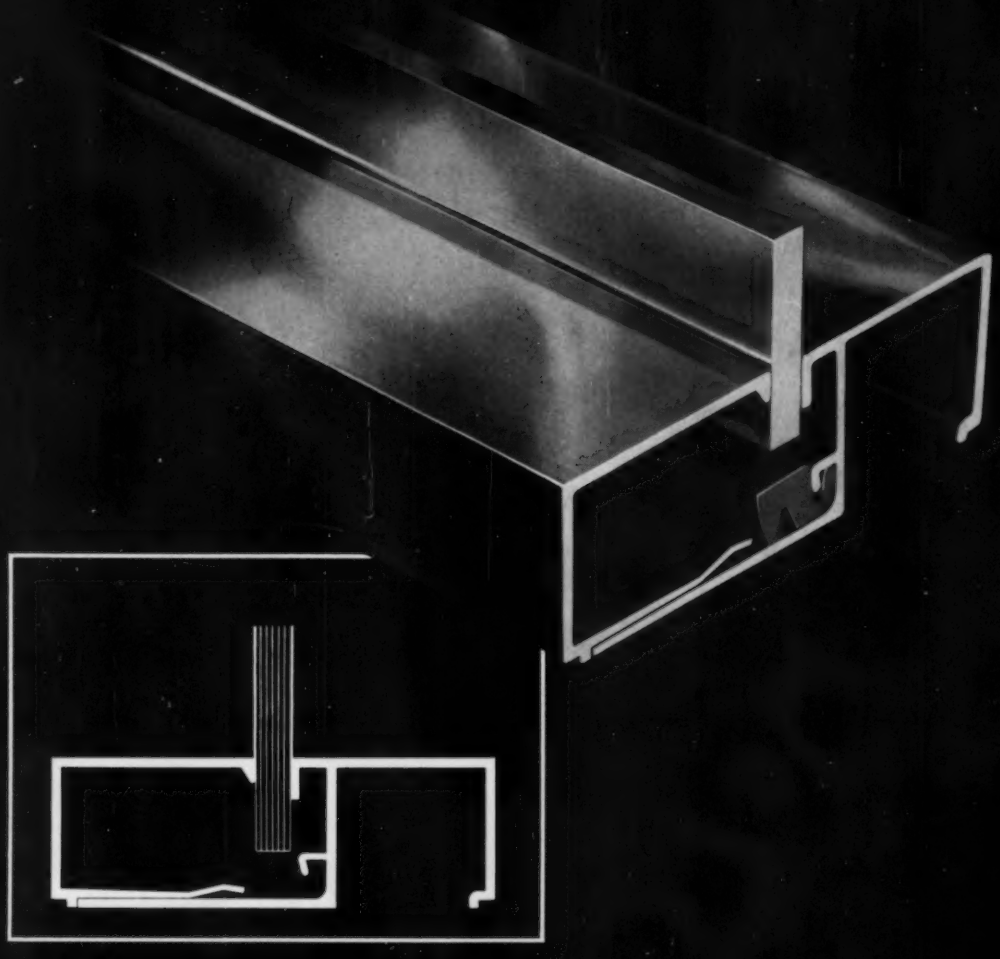
PLUMBING FIXTURES
Division of Rheem Manufacturing Company
16 Pearl Street, Metuchen, N. J.

The Fastest Growing Name in Plumbing Fixtures

PITTCO® SASH No. 15-C

This sash has the cleanly defined profiles typical of all sash, mouldings and bars that make up the PITTCO Metal Products line, including both rolled and extruded members. See your PITTCO Store Front Metal Representative for complete details.



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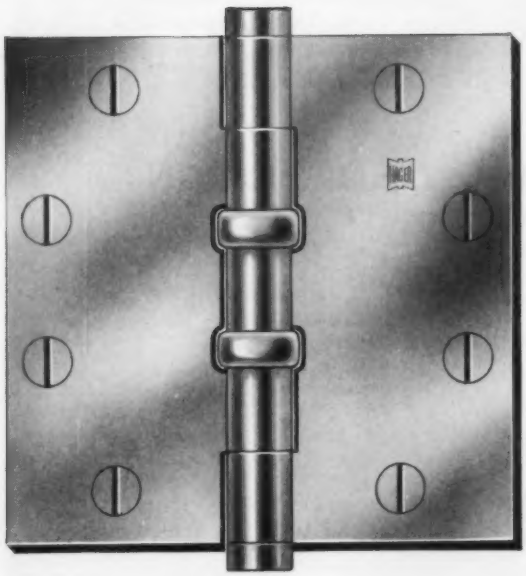
PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

speaking of 2-ball-bearing hinges...

ONLY A HAGER HAS THE EXCLUSIVE "Life-Time Bearing"

PERMANENTLY ANCHORED IN THE KNUCKLE WITH CASE HARDENED STEEL—NOT BRASS

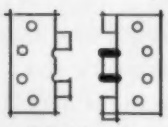


In the wear-away zone (zone of bearing anchorage) soft brass rubs steel in other leading hinges and they sometimes fail. Not so with Hager!

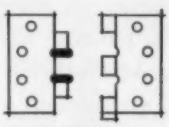
Hager's advanced, two-knuckle-bored construction puts steel against case hardened steel in this failure zone. The result is flawless ball bearing performance—life-time performance.

Yet you pay no premium for Hager's superior design and material. Compare and discover: Hager 2-ball-bearing hinges are unequalled in the industry!

These same life-time features are also a part of the Hager 4-ball-bearing hinges.

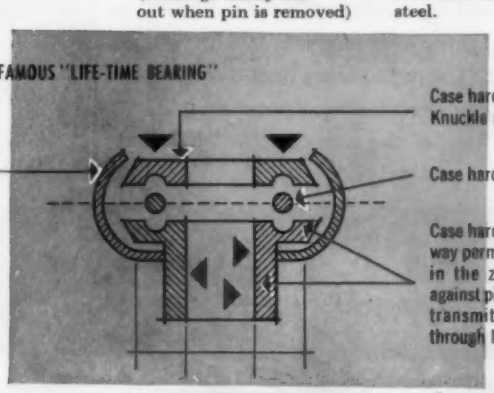


NOT THIS...
not one-knuckle-bored with wear-away brass to anchor the bearings. (Bearings finally fall out when pin is removed)



BUT THIS...
two-knuckle-bored construction with bearings anchored with case hardened steel.

EXPLODED CLOSE-UP OF HAGER'S FAMOUS "LIFE-TIME BEARING"


Brass outer shell permanently fixed. Protects raceways and balls from dirt. Contains lubricant in bearing.
Case hardened steel top raceway. Knuckle rides on this.
Case hardened carbon steel balls.
Case hardened steel bottom raceway permanently fixed. Puts steel in the zone of lateral thrust against pin. Carries vertical thrust transmitted from top raceway through balls.
VERTICAL THRUST
LATERAL THRUST

(Both stainless steel raceways and balls are available on stainless steel ball-bearing hinges.)

EVERYTHING HINGES ON HAGER®

EVERYTHING HINGES ON HAGER

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Einstein Tower, Astro-Physical Institute, Potsdam, 1920

Eric Mendelsohn. By Arnold Whittick. F. W. Dodge Corporation (N.Y.), 1956. 219 pp., illus. $9.85

A TIMELY REVIEW OF MENDELSOHN DESIGN

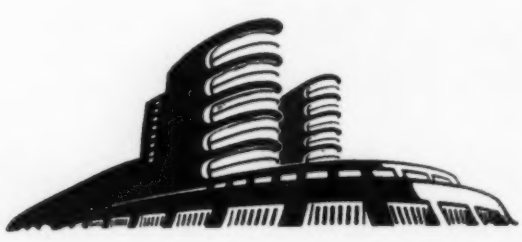
By H. H. WAECHTER, A.I.A.

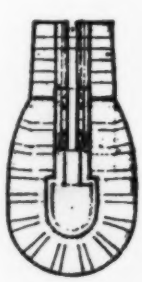
THERE COULD BE no better choice of time for bringing to the fore again the name and work of Eric Mendelsohn. With older publications by and about Mendelsohn unavailable now, the new and enlarged edition of Arnold Whittick's book is filling a legitimate need. The publisher has done a fine job with this beautifully illustrated volume, showing a good cross section of Mendelsohn's work.

To this reviewer, the generous space given to many of the famous sketches is most significant. As Mendelsohn once said, "only the future requires prophets!" Despite the great inspiration which his executed buildings are imparting on us, the visions of his sketches will be of still greater importance in the years to come. The fluidity of his forms and the drama of expressive space are certainly parts of his imagination which will carry over into a time when our rectilinear modernism will be a thing of the past. The explanatory quotations from Mendelsohn's letters to his wife add much to the understanding of these sketches.

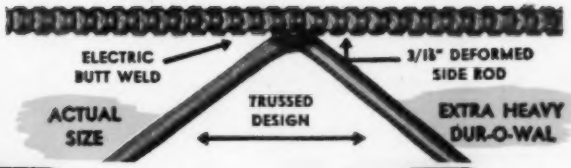
It is fortunate that pictures of the now destroyed hat factory at Luckenwalde

(Continued on page 62)





Sketch and plan for optical factory



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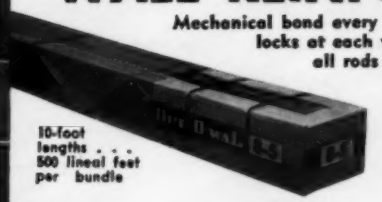
RIGID MASONRY WALL REINFORCEMENT

Mechanical bond every 8 inches of wall . . . Two mortar locks at each weld . . . Electric butt welds place all rods on a single plane; make possible uniform mortar joints . . . Trussed design causes side rods to work together . . . Conforms to ASTM std. A-82-34 for high tensile steel . . . 6-inch lap at splices develops continuity and maintains reinforcing strength . . . Deformed side rods for maximum bond strength.



SELECTION TABLE

Wall Thickness	4 in.	6 in.	8 in.	10 in.	12 in.	13 in.
Extra Heavy Dur-O-wal	4-EH	6-EH	8-EH	10-EH	12-EH	13-EH
Wt. per 1000 lin. ft.	247 lb.	250 lb.	257 lb.	266 lb.	276 lb.	282 lb.
Standard Dur-O-wal	4-S	6-S	8-S	10-S	12-S	13-S
Wt. per 1000 lin. ft.	178 lb.	180 lb.	187 lb.	196 lb.	207 lb.	212 lb.

Furnished in either bright basic or galvanized steel. Specify Drip Section Dur-O-wal for Cavity Walls.

NOTE — In determining whether to specify Standard weight or Extra Heavy weight Dur-O-wal, comparisons in following table should be properly evaluated:

	Weight lbs. tensile steel per lin. ft	Surface bond area—sq. in. per lin. ft.	Number of mortar locks per lin. ft.
Standard weight Dur-O-wal	0.19	11.18	3
Extra Heavy Dur-O-wal	0.26	14.14	3

Butt Weld **DUR-O-WAL** *with* RIGID TRUSSED *Design*

the Backbone of Steel for EVERY masonry wall

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... **Optical grade clarity** in transparent form. ... **Colorful**—select from a rainbow of bright or subdued hues.

This combination of properties means superior performance when PLEXIGLAS is used for spandrels . . . louvers . . . glazing . . . dome skylights . . . lighting diffusers . . . luminous ceilings . . . daylight control . . . office partitions . . . architectural signs.

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☐ Daylight Louver Panels ☐ Lighting Equipment
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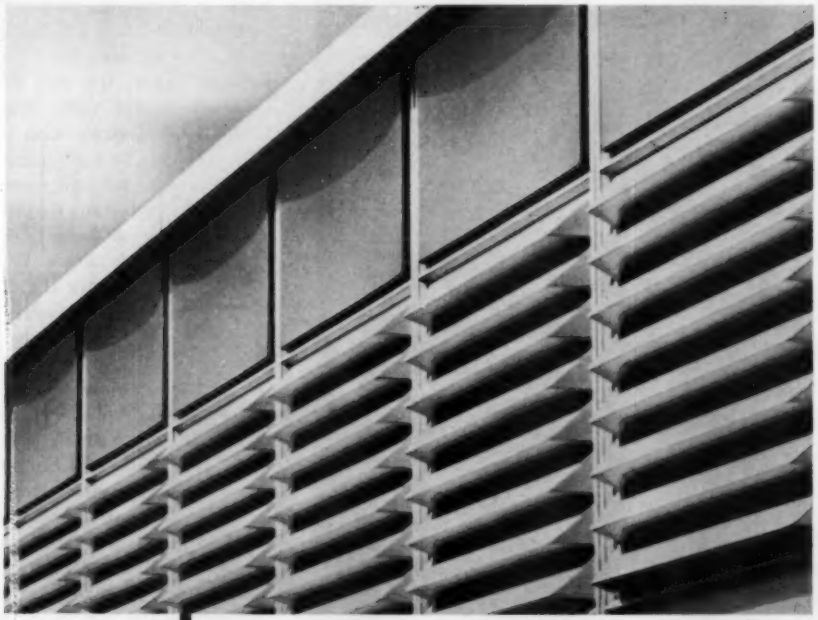
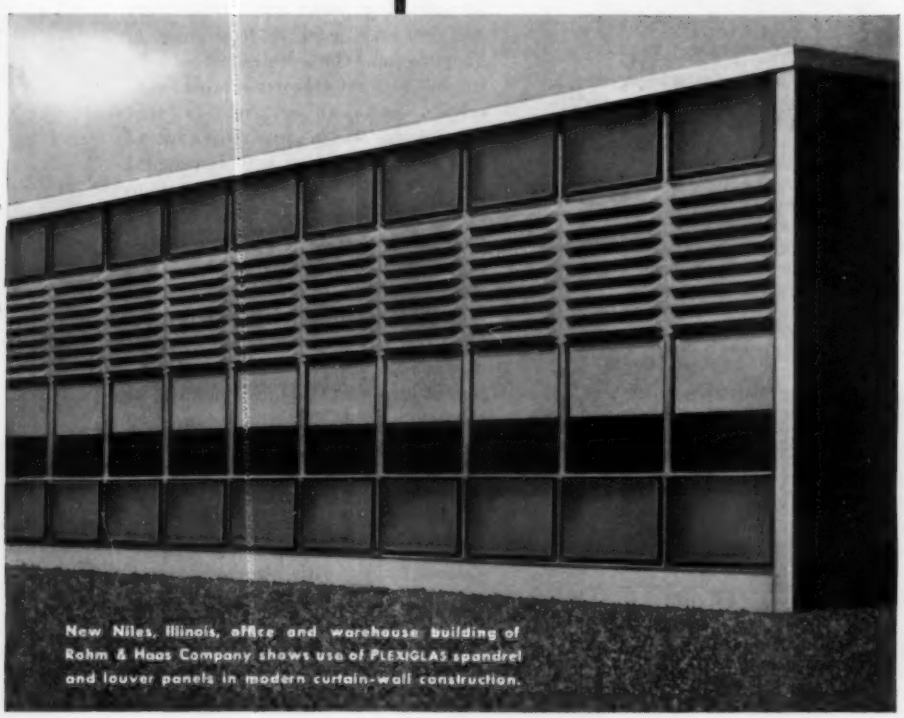
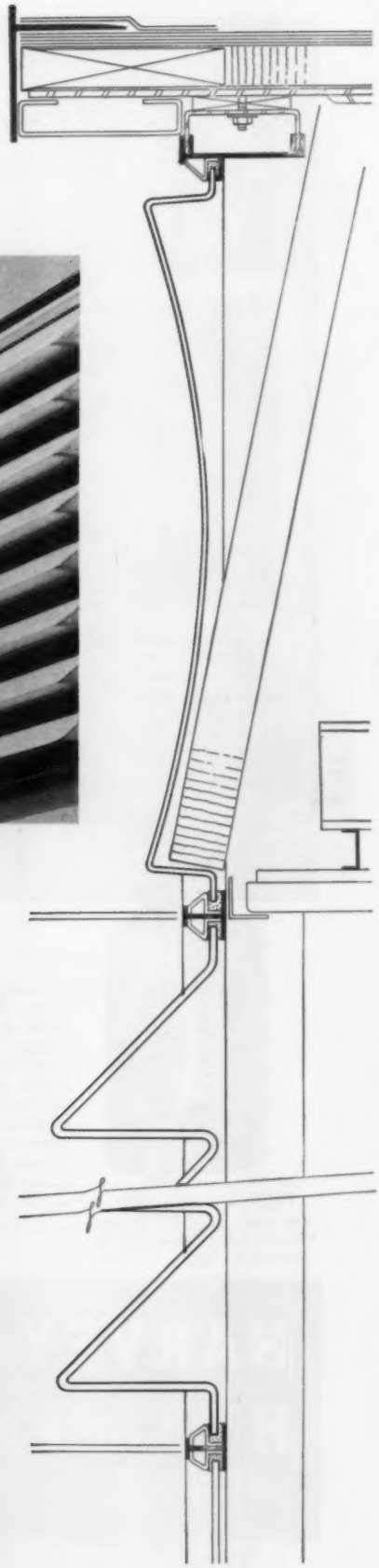
Spandrel Panels formed from PLEXIGLAS provide functional beauty . . . lightweight . . . economy and low maintenance advantages.

Daylight Louver Panels . . . light transmission, daylight control and weather closure in a single formed sheet of PLEXIGLAS.





New Niles, Illinois, office and warehouse building of Rohm & Haas Company shows use of PLEXIGLAS spandrel and louver panels in modern curtain-wall construction.



Dependable AC switch control is of vital importance in any fluorescent lighting installation where high levels of illumination require a large number of fixtures operated at full rated capacity. As in the beautiful school plant above, Topper AC quiet action switches are the ideal choice because they are designed to control many more fixtures than conventional switches, thus permitting control of *more fixtures with each switch*. Operation of heavier circuits (and fewer of them) results in lower wiring costs. Remember, too, that Topper switches are shallower, take up less room and are easier to install.

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REQUIRED READING

(Continued from page 58)

were included. Amazingly enough, such expressions of organic architecture are still evoking a stimulus of fresh beauty. Only today, more than thirty-five years later, an increasing number of young designers are being influenced by such ideas. Like the sculptured forms of the Einstein tower, the only built manifestation of his early sketches, the Luckenwalde factory with its angular shapes cannot be analysed in terms of functionalism and constructivism. This organic architecture is primarily an artistic interpretation of life's functions in harmony with nature. It seems significant to this writer that at the end of his career, Mendelsohn closed the cycle of his development by returning more or less to the dynamic visions of his youth, but rarefied with fine lyricisms and the serenity of mature age.

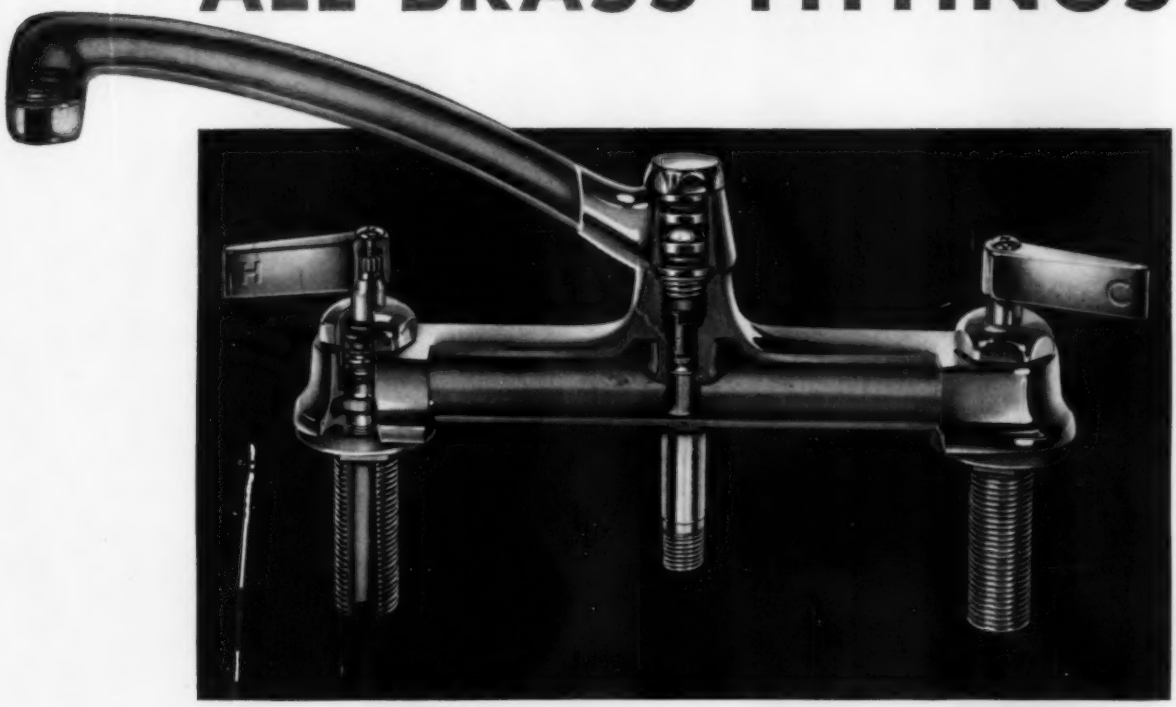
Mr. Whittick is giving a pocket-sized historical roundup of European architecture in his introductory chapter. Suspecting the usual build-up of the hero, one is surprised to find the anticlimactic statement that Mendelsohn can hardly be regarded as one of the pioneers of the new architecture, but rather as one who has combined the experiments of his forerunners. However, Gropius is Mendelsohn's senior by only four years and cannot very well be considered a forerunner of Mendelsohn. Whittick's study actually testifies to what this writer would consider a historical fact, namely, that Mendelsohn was a great exponent of that generation which initially signaled the profound changes which were to come within Western civilization in the wake of two world wars and several social uprisings. Quite typical for him, in this atmosphere of disintegration he rallied all his strength to find order and inner serenity in his work by contrast to eccentric stimulation and the inflation of standards of life which are so characteristic of this century of material productivity. It did not suffice for him to take the cut and dried suggestions of industrial standardization. In fact, he felt the chill of rationalistic doctrines.

Mr. Whittick's book deals in a chronological fashion with Mendelsohn's development and work. The writing is very enjoyable, somewhat conversational in character, and thus done at the expense of completeness and exactitude.

(Continued on page 400)

KOHLER

ALL-BRASS FITTINGS



Every bit of metal in a Kohler fitting, underneath the chromium plating, is brass, of high copper content. This includes handles and escutcheons.

Brass has no equal for serviceable and satisfactory plumbing fittings.

- **Brass is superior in wearing qualities.**
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Better than any other metal or alloy, brass takes and holds chromium plating, giving Kohler *All-Brass* fittings their long-lasting bright, jewel-like beauty.

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Scott Towers, Long Branch, N. J., was designed by Erwin Gerber and A. Pancani, architects of Newark, N. J. *General contractor:* Lawrence Builders, Inc., Long Branch, N. J.

STEEL JOISTS IN APARTMENT ROOF STRUCTURE HELP KEEP MAINTENANCE COSTS DOWN

These two attractive apartment houses built on an ocean-front property in Long Branch, N. J., are known as Scott Towers. Only a step from the beach, Scott Towers also has its own swimming pool in a court between the buildings, and plenty of private parking space.

Both buildings are steel-framed, and both have Bethlehem Steel Open-Web Joists in their ceiling structures. The use of these steel joists will contribute to economical building maintenance because they won't warp or sag. Joints and corners remain tight throughout. In addition, the use of Bethlehem Open-Web Steel Joists reduces the amount of combustible material in the building's construction, thereby helping to promote fire-safety for up to four hours.

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BETHLEHEM OPEN-WEB STEEL JOISTS

BETHLEHEM STEEL

Aluminum-clad insulation makes this large, new house as economical to heat and cool as an ordinary small house.

With ALUMINUM-CLAD INSULATION this Maryland home was heated and air conditioned for one year for $300—or $25 a month

This is a test home in a Washington, D.C., suburb. It has a heated and cooled area on three floors of 4,590 sq ft. For the year ended May 1957, carefully kept records show that the cost of operating furnace and central air conditioner to maintain a mean 73 degrees was $301.68—or $25.14 a month.

Low? Yes—but economies like this are the rule when adequate insulation, surfaced with ALCOA® Aluminum, is installed in walls and ceilings. During winter, aluminum-clad insulation keeps furnace heat *in* to cut fuel expense. During summer, it is the most effective insulation known for keeping *out* radiant heat.

And this is important to both builder and buyer: aluminum-clad insulation cuts original equipment costs. In this case, for example, specifications with FHA-minimum insulation would have called for a 225,000-Btu furnace and 5-ton air conditioner. But with aluminum-clad insulation, only a 175,000-Btu furnace and a 3-ton air conditioner are needed.

It works out the same way for smaller houses, too, of course. Aluminum-clad insulation pays for itself in lower equipment costs, then gives year-round comfort . . . in a Care-free home that costs less to heat and cool.

ALCOA does not make insulation of any kind, but ALCOA Aluminum is used by many manufacturers to produce several types of insulation. ALCOA's new book about insulation, *Comfort Everybody Can Afford*, has been written especially for builders. Mail the coupon today for your free copy.

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Gentlemen: Please send my free copy of your new book about insulation: *Comfort Everybody Can Afford.*

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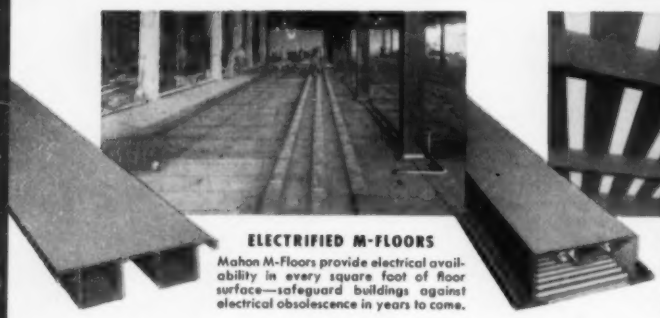

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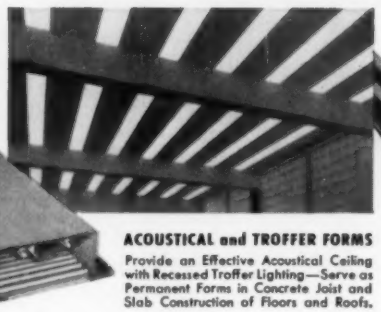
Mahon M-Floors provide electrical availability in every square foot of floor surface—safeguard buildings against electrical obsolescence in years to come.



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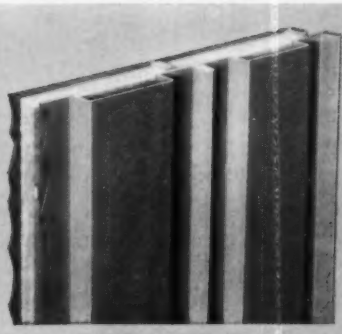
Provide an Effective Acoustical Ceiling with Recessed Troffer Lighting—Serve as Permanent Forms in Concrete Joist and Slab Construction of Floors and Roofs.

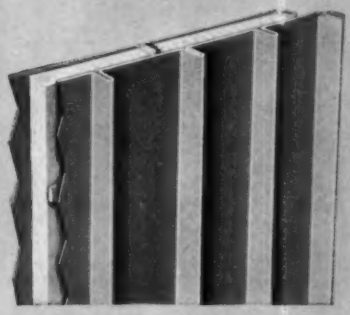
CONCRETE FLOOR FORMS

Mahon Permanent Concrete Floor Forms in various types meet virtually any requirement in concrete floor slab construction over structural steel framing.

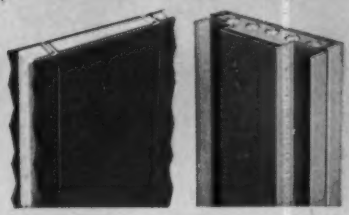
Cost Permanence in Continuous Patterns that Produce Attractive Exteriors!



MAHON FLUTED WALL
FIELD CONSTRUCTED



MAHON RIBBED WALL
FIELD CONSTRUCTED



FLUSH FLUTED
MAHON PREFAB WALL PANELS

Almost everywhere you look in America today, you will see new, modern buildings with bright metal exteriors which give them a neat, clean-cut appearance—a certain look of trimness and distinction that sets them apart from the conventional . . . these are truly modern buildings constructed with permanent, light weight, stainless steel or aluminum curtain walls.

Some of the country's outstanding architects have employed Mahon Insulated Metal Curtain walls skillfully and to good advantage, costwise, in producing striking exterior design effects in office buildings, schools, armories, military barracks, sports arenas, parking garages, warehouses, industrial buildings of all types—including powerhouses, and some important monumental buildings. The engineering-research building and the two industrial plants illustrated at the left are typical examples.

Metal Curtain Walls with exterior plates of embossed or colored aluminum, stainless steel, or cold rolled steel painted, employed in combination with brick, ornamental stone, glass block or other materials offer unlimited possibilities in architectural treatment of exterior design. Bright metal, or colored metal, provides the designer with the means of individualising and creating distinctiveness in almost any type of building.

In Mahon Insulated Metal Walls, vertical joints are invisible—symmetry of pattern is uninterrupted across the wall surface . . . and, the field constructed walls can be erected up to sixty feet in height without a horizontal joint. These two design features, which are extremely important from an appearance standpoint, were engineered into Mahon Insulated Metal Curtain Walls to give you a finer appearing wall surface with a continuous pattern free from unsightly joints.

You'll want to investigate these Mahon "better look" features before you select a metal curtain wall for any building.

See Sweet's Files for information, or write for Catalogue W-57.

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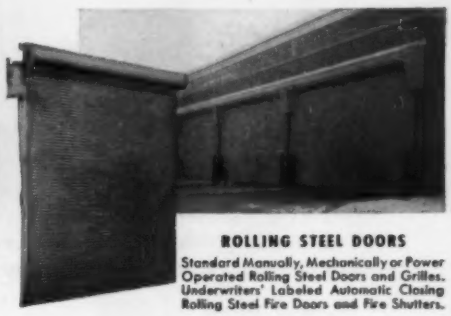

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Architect: A. R. Clas, A.I.A., Washington, D.C.

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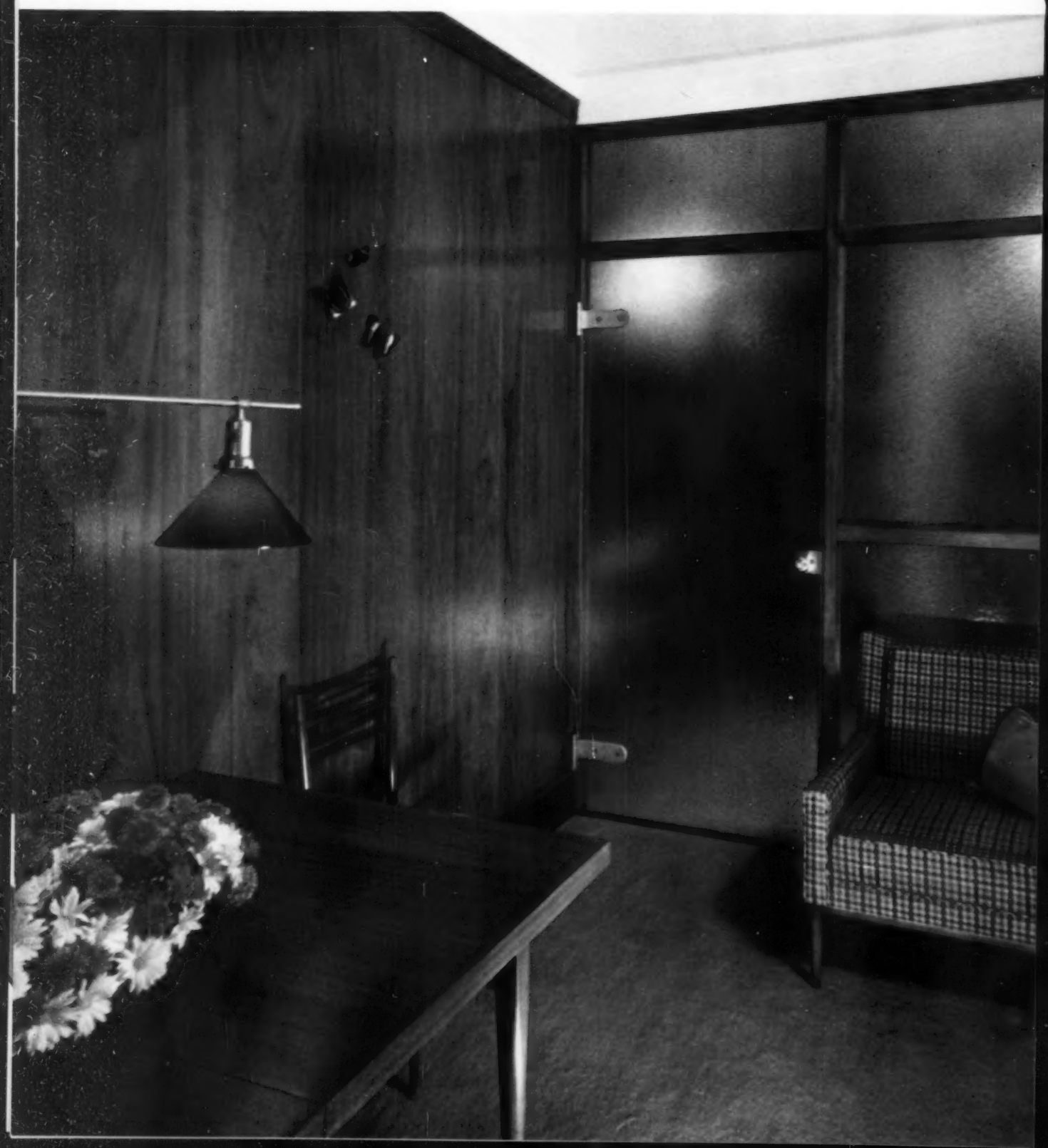

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Patterned Glass

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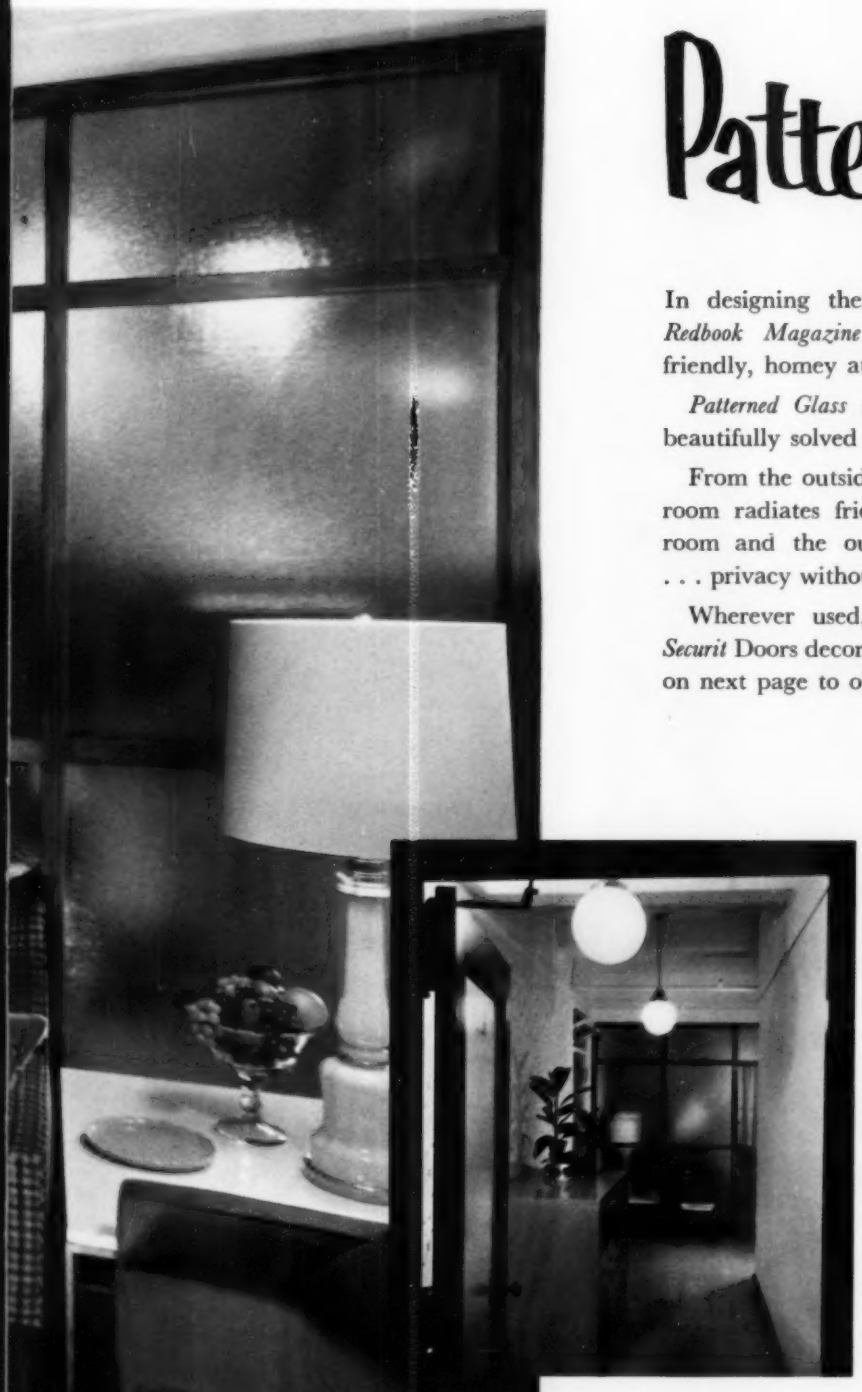
Patterned Glass and *Securit*® Interior Glass Doors beautifully solved their problem.

From the outside, or inside, this dining-conference room radiates friendliness. Light is shared by this room and the outer office. Yet each has privacy . . . privacy without the feeling of confinement.

Wherever used, Blue Ridge *Patterned Glass* and *Securit* Doors decorate, separate, brighten. Use coupon on next page to obtain detailed information.



Muralex pattern (one of more than 20) used in partition and door. **Satinol®** treated for softer light diffusion.

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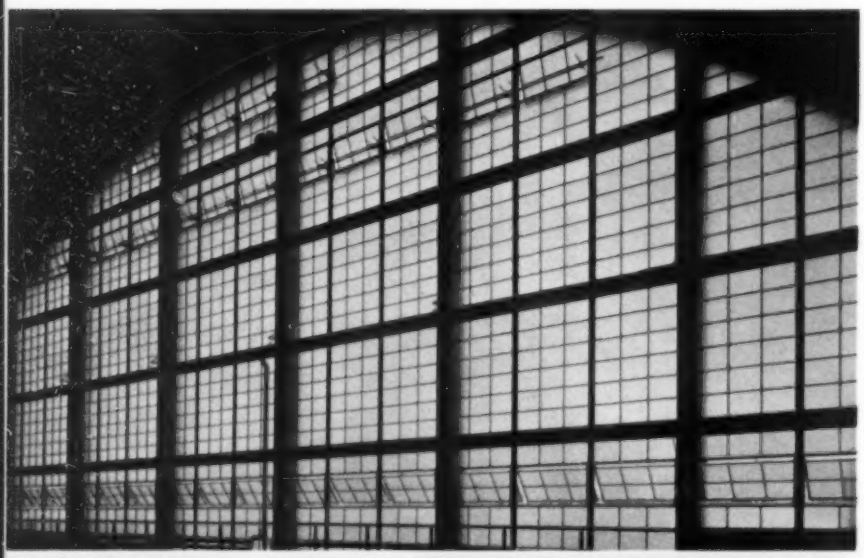

For this field house or the factory (or wherever you need to provide large quantities of daylight *without glare*) AKLO Glass is the answer.

Much like the color of better quality sunglasses, blue-green AKLO Glass lets through the most desirable portion of the sun's rays—that part of the spectrum most restful to the eyes—blue, green and yellow. The resulting "filtered daylight" fulfills the fundamental requirements of good illumination. It makes seeing so much easier. And reduces eye fatigue.

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AKLO is available in Hammered, Finetex® and Skytex® patterns, wired; Hammered and Finetex, unwired. Frosted finish also available. For detailed information, use coupon.

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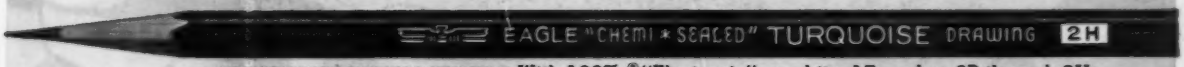

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(as it is in most multi-story buildings). Plaster made with Permalite perlite aggregate is less than half the weight of sanded plaster, cutting dead load and allowing substantial savings in steel and other construction costs.

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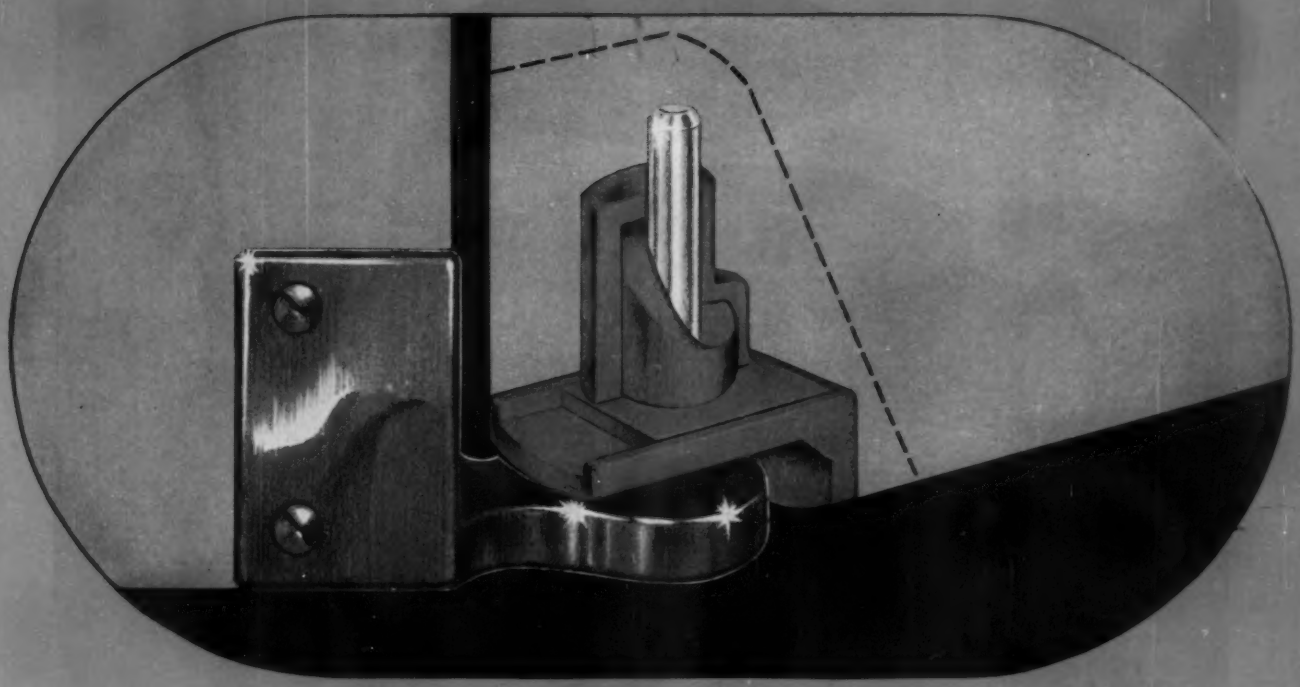

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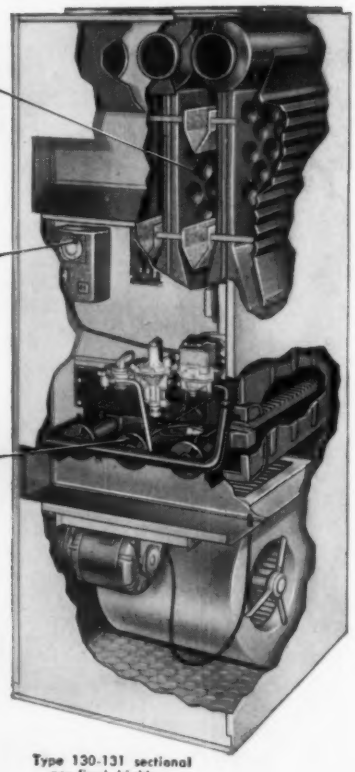

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Never before such high quality at this economy price—the latest in Mueller Climatrol's sensational Suburbanaire* line. This newly designed gas-fired highboy is packed with features all its own, including a knobbed surface heat exchanger that greatly increases efficiency by increasing "scrubbing action" of air, therefore giving better heat exchange. The 130-131 is a sure bet to set the season's sales pace. See the Yellow Pages in your phone book for the location of your nearest Mueller Climatrol Dealer.

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In cooling, Mueller Climatrol not only protects you and your customers against defects in *any part* of the refrigeration cycle, but PAYS A LABOR ALLOWANCE should service be needed. *Furnace warranty* not only covers all parts for one year, but the heat exchanger for TEN!

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Mueller Climatrol Progress Flash!

For complete Mueller Climatrol product information see Sweet's Architectural and Light Construction Files.

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Minneapolis, Minn.
Developer: The Dayton Co.
Architect: Victor Gruen Assocs
General Contractor: Johnson, Drake & Piper, Inc.
For Donaldson's Store—
Gen. Contractor: Watson Const. Co.
Architects & Engineers: John Graham & Co.
Interior Design: Alvin L. Weidt & Assocs.

Painting Contractor: Julius Nelson & Son
P & L Products Used: Vapex Wall Primer, *New* Lyt-all Flowing Flat, Vitralite Enamel, Alkatite Cement & Stucco Paint, Effecto Enamel

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"STAINLESS STEEL for STORE FRONTS and BUILDING ENTRANCES"

Either for modernization or new construction, this 40-page booklet contains many ideas on handsome treatments for you. (Note: A new booklet on "AL Stainless in Food Preparation and Serving Equipment" is in process—write for one of the first copies when available.)

ADDRESS DEPT. R-93

Sure, the owners will need a good chef and good management in their kitchen and dining-rooms—but first of all, they'll need stainless steel equipment! That's where to start for the highest sanitary standards—the easiest, quickest cleaning and lowest-cost maintenance. And that's where to start for the greatest long-term economy, too—because stainless steel can't chip, crack, peel or wear off. It costs a building owner much less than anything else in the long run because it literally lasts for a lifetime . . . stands up under the heaviest service and stays beautiful all the way. ● In the kitchen, in the dining-room (and for structural details, too) specify *stainless steel* . . . it pays! ***Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa.***

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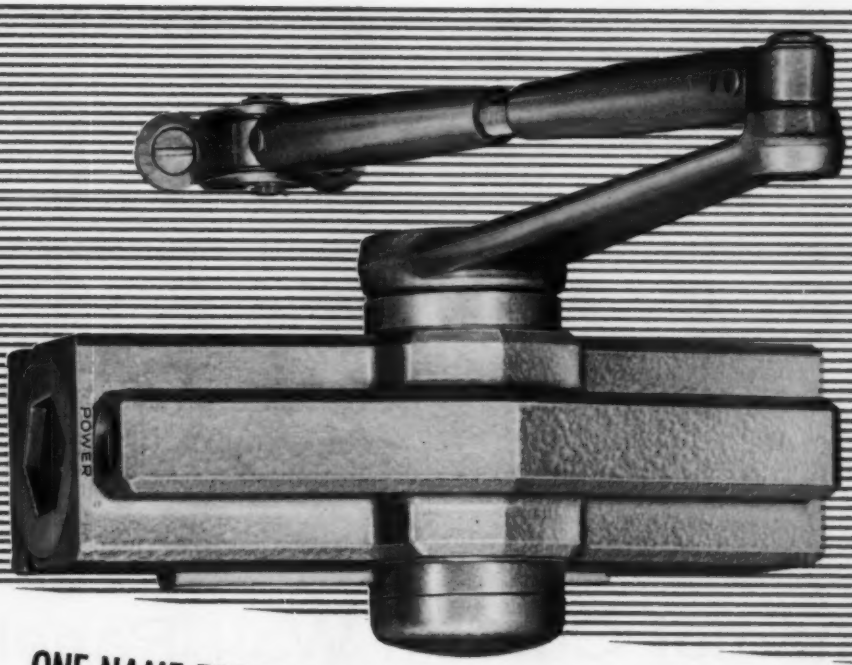

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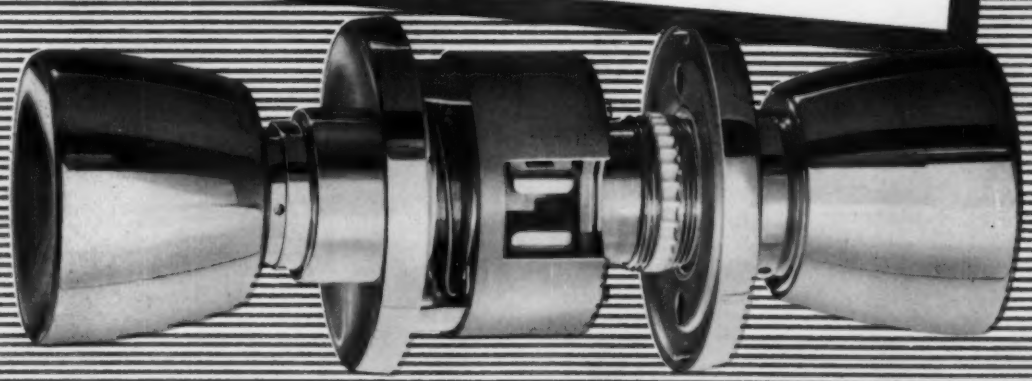

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Enamel Curtain Wall Panels

1. **Color without Maintenance**
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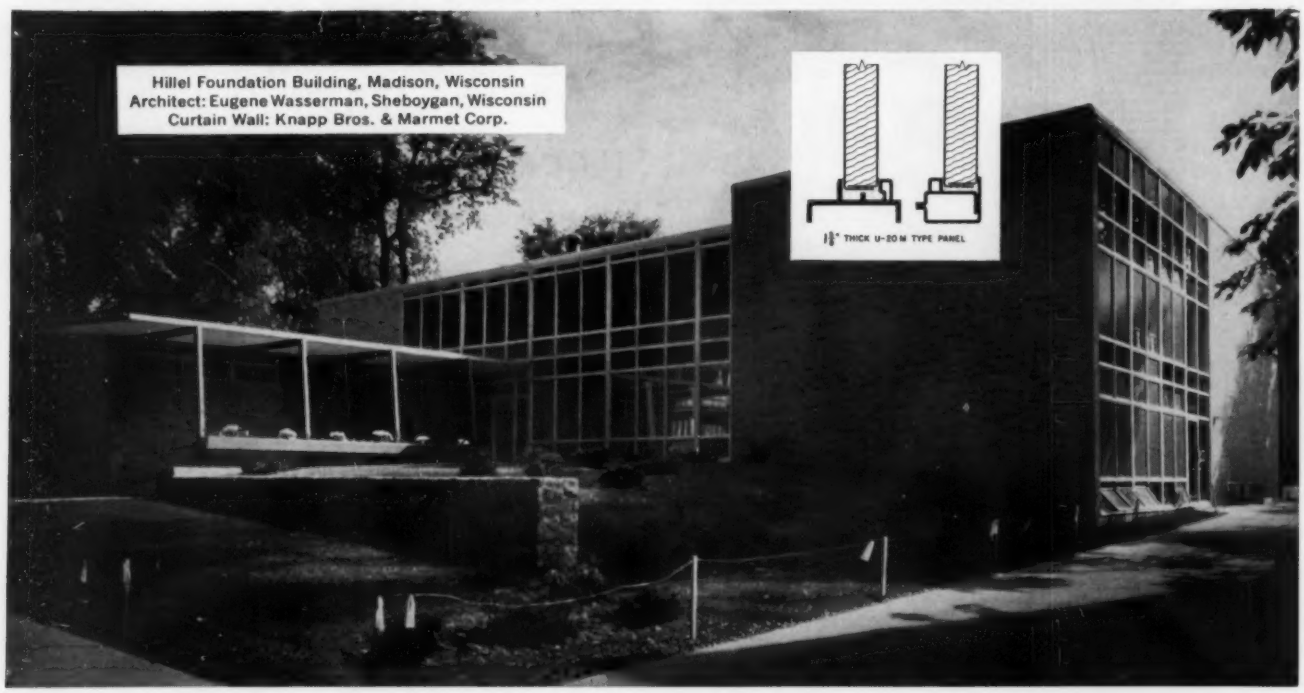
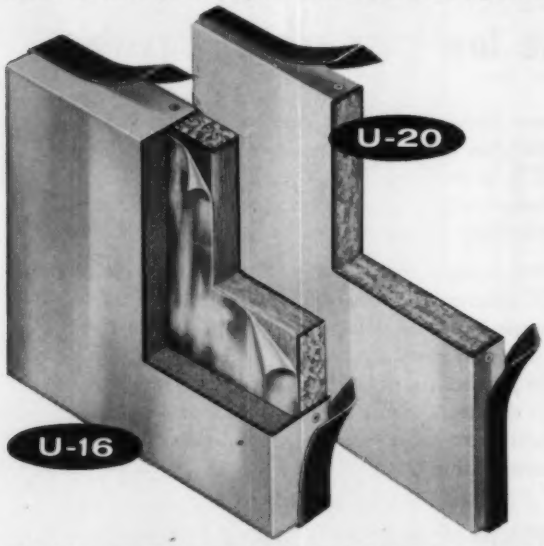

Hillel Foundation Building, Madison, Wisconsin
Architect: Eugene Wasserman, Sheboygan, Wisconsin
Curtain Wall: Knapp Bros. & Marmet Corp.
1⅜" THICK U-20 M TYPE PANEL

Peoples Federal Savings & Loan Association, Peoria, Illinois. Architect: Gregg & Briggs, Peoria, Illinois
4" THICK U-16 M TYPE PANEL

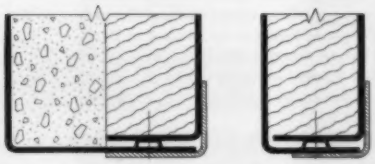
Erie Porcelain Enameled Curtain Wall Panels guarantee you all these requisites of the ideal wall because they are engineered to these specifications.

Completed buildings in all climates of the country stand as evidence to these claims, and *modifications* of both panel types have been developed to match all recognized framing systems and insulation requirements.

If you have been looking for curtain wall panels that have been specifically designed to fulfill your requirements for color, insulation and permanence, check into the ERIE U-16 and U-20 designs.



Write for this complete descriptive bulletin which includes details and modifications. Sketches are also available showing modifications to any desired framing system.



Mechanical Fastening through flanges with minimum metal-to-metal contact is illustrated in these partial cross sections. Various thicknesses and U-factors are readily achieved.

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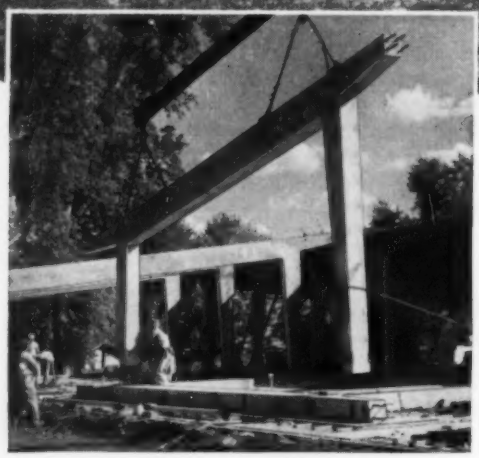


Large photo shows one wing of the Linton-Stockton School. Small photo above shows a close-up view of one of the precast concrete bents while photo below shows method of stockpiling concrete bents before erection. Designed by Thomas C. Dorste and Spiros G. Pantazi of Indianapolis. Structural engineer was Floyd E. Burroughs, also of Indianapolis.

Precast concrete members make low-cost school possible

The new Linton-Stockton Elementary School in Linton, Ind. has been widely acclaimed in educational circles. It is an example of the speed and economy with which urgently needed classrooms can be provided quickly and economically.

Saving in time and money resulted from the use of precast concrete construction. The frame is formed by precast concrete bents supporting precast channel slabs. Integral parts of the bents are arms for cantilevered sections. Both bents and roof slabs were precast on the site. Careful planning, standardization of members and utmost re-use of forms held down costs and construction time.

As a result the 80,000-sq. ft. school was built for $870,000. Its 36 classrooms, averaging 1200 sq. ft. in size, will accommodate 1,200 pupils. The restrooms and halls are floored with terrazzo, which was also used for wainscoating in the building.

Modern precast concrete schools such as this not only have low initial cost but also low maintenance cost, long life and low annual cost. And they're fire-safe, too! So make your next school precast concrete.

PORTLAND CEMENT ASSOCIATION
33 West Grand Avenue, Chicago 10, Illinois
A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

a new, crystal bright star

on the lighting horizon with
PRISMATIC LIGHT CONTROL

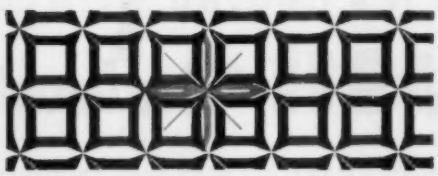
PRISMOID GRATELITE* BY GUTH

* Pat. Pend.

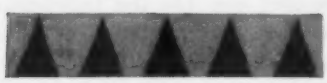
THE PRISMATIC LOUVER-LENS

... employs thousands of plastic prisms to create functional, beautiful lighting patterns. Up to an amazing 86% efficiency with low brightness control comparable to accepted standards. Plus, *BREATHING ACTION*—for better maintenance and cooler operation.

HERE'S A HEAD-ON VIEW:



HERE'S A CROSS-SECTION:



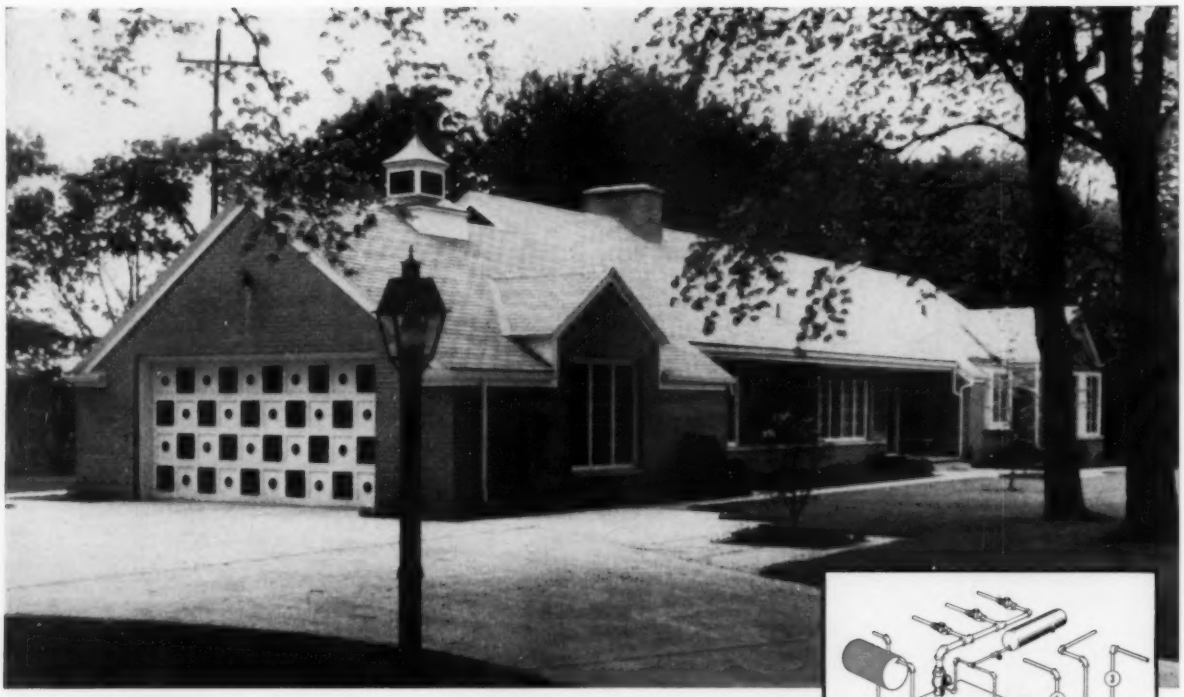
Add this new touch of charm plus Guth's traditional lighting efficiency to your installations.

WRITE FOR ALL THE DETAILS OF THE EXCITING PRISMOID GRATELITE STORY

THE EDWIN F. Guth COMPANY

ST. LOUIS 3, MISSOURI

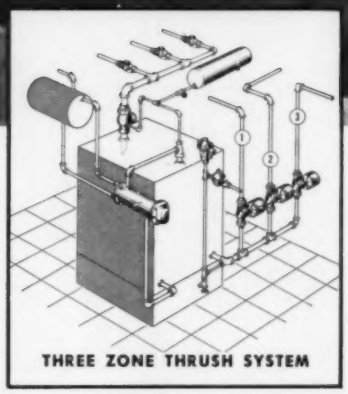
TRUSTED NAME IN LIGHTING SINCE 1902



New home of Dr. J. Mishkin, Elkhart, Indiana. Heating Contractor: Cal Ulery.

Real Heating Comfort

in this fine new residence because it's heated with . . .

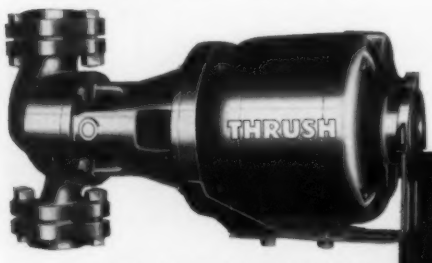


THREE ZONE THRUSH SYSTEM

THRUSH Radiant Hot Water Heat

RADIANT BASEBOARD hot water heat, Thrush controlled, assures perfect heating in any weather in this beautiful new residence. There are three zones . . . one for the recreation room, one for the living area and one for the bedrooms. Zoning is accomplished simply and inexpensively with a Thrush Radiant Heat Control, a Thrush Circulator and a Thrush Flow Control Valve for each zone. Desired temperatures are maintained automatically in each zone.

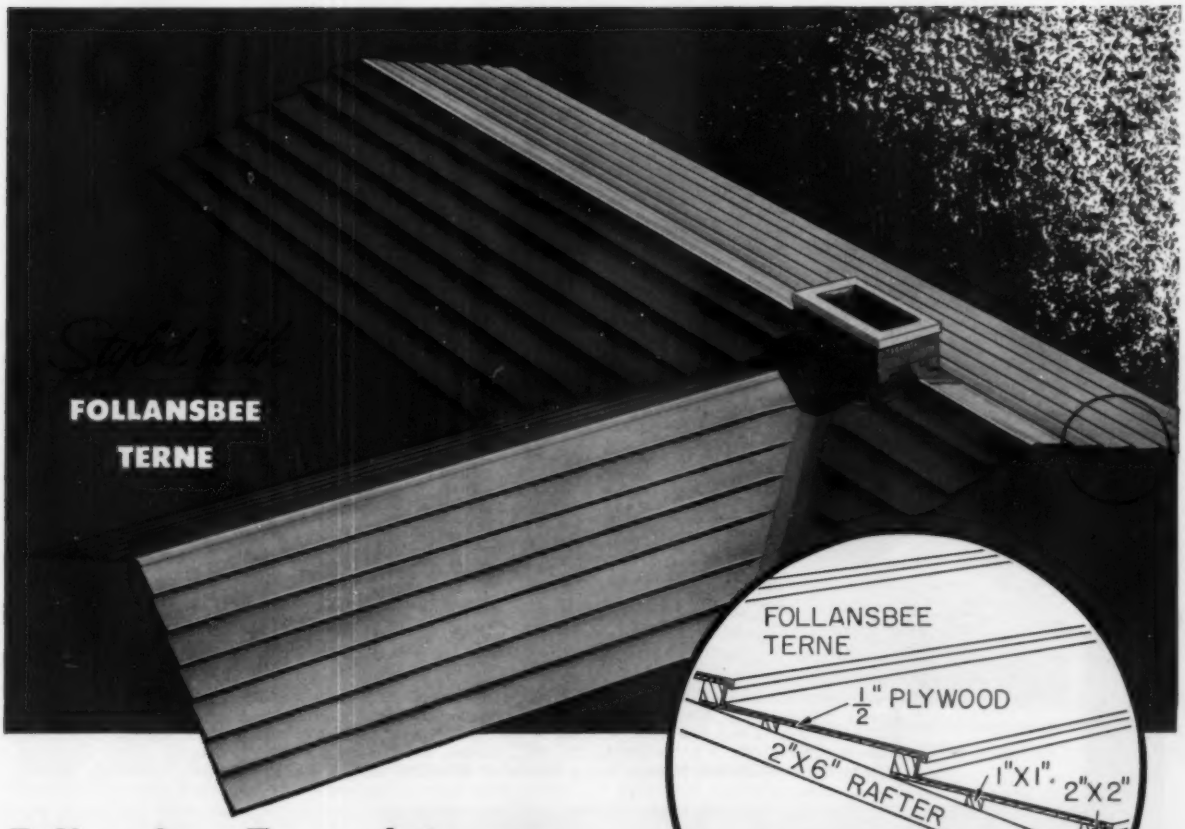
Yes, hot water heat is a big feature in selling a home. It's the quietest, cleanest, mildest and most flexible modern heating method, ideal for small as well as large homes. Zoning makes possible accurate temperature control which results in greater operating economy and comfort. If you haven't been specifying hot water heat, investigate the many sales advantages of Thrush Hot Water Heating today.



THRUSH WATER CIRCULATOR

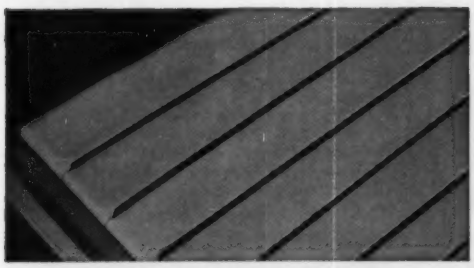
See our catalog in Sweet's or write Department J-9 for more information.

H. A. THRUSH & COMPANY
PERU, INDIANA



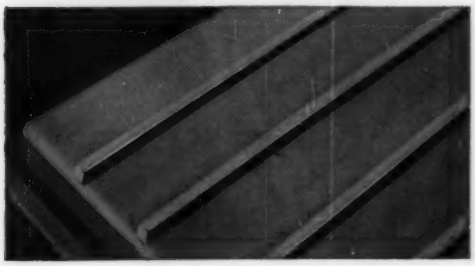
BERMUDA ROOF
Cross-section showing a method of installation for a horizontal seam Bermuda roof of Follansbee Terne

Follansbee Terne lets you put DESIGN in the roof!



STANDING SEAM INSTALLATIONS give the roof an ever-changing look depending on the sun's position. Simplest to install.

BATTEN SEAM INSTALLATIONS produce the same effect, but in addition, they show the roof pattern to a more marked degree.



Follansbee Terne has the versatility that allows you to put *design* in an important feature of your houses—the roof. The standing or batten seam installations give different surface and shadow effects . . . and the new Bermuda roof as shown above is completely distinctive with its horizontal seams and shadow lines.

Just as important, of course, is the fact that Terne is a lifetime material, having proved its serviceability with installations giving trouble-free service for more than 100 years.

We'll be happy to send you complete information about Follansbee Terne.

FOLLANSBEE
STEEL CORPORATION
FOLLANSBEE, WEST VIRGINIA
Cold Rolled Strip • Terne Roll Roofing • Polished Blue Sheets & Coils
Sales Offices in Principal Cities

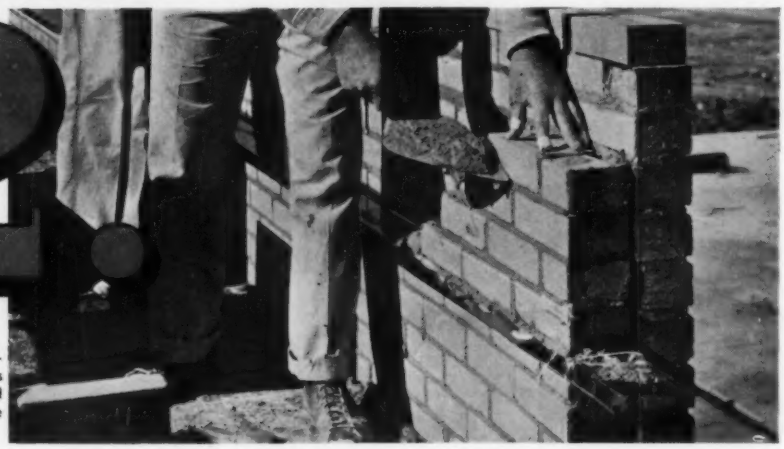
Fabulous Gulfgate

Owner: THEODORE W. BERENSON AND ASSOCIATES, Boston, Mass.; Architects-Engineers: JOHN GRAHAM AND COMPANY, Seattle and New York; Associate Architects: IRVING R. KLEIN AND ASSOCIATES, Houston; Contractors-Engineers: FARNSWORTH & CHAMBERS CO., INC., Houston; Sheet Metal & Roofing Contractor: LYDICK ROOFING COMPANY OF HOUSTON, Houston; Revere Distributor: MONCRIEF-LENOIR MANUFACTURING COMPANY, Houston.

1

HERE YOU SEE workman putting the Revere-Keystone standard 4" flat copper receiver with ¼" hook dam in place preparatory to putting masonry in place. Revere-Keystone 2-Piece Cap Flashing also comes in combination receiver and Thru-Wall Flashing, with receiver furnished in 49" lengths (48" layup), with 1" overlap in a locking tongue dam to assure proper alignment. (See diagram on next page.)

2



MASONRY being put in place over the Revere-Keystone 2-Piece Cap Flashing. In this way masons and roofers can work without interference and without damaging cap which is snapped into place after work is completed.

Shopping Center

takes 3 fast steps to a tight-as-a-drum Flashing Installation... uses

REVERE-KEYSTONE*

EASY-TO-PLACE 2-PIECE CAP FLASHING

This Shopping Center, located in Houston, Texas is the largest regional Shopping Center in the South, and includes famed Joske's and Sakowitz Department Stores. The Center itself, including buildings, truck tunnels and malls covers about 840,000 square feet, with the entire plot covering 2,580,000 sq. ft. which has in excess of 5,000 prime car parking spaces. It represents a $32,000,000 investment and was designed by JOHN GRAHAM & Co., of Seattle and New York.

Although there are 15,000 lbs. of Revere Sheet Copper and 8,600 ft. of Revere Reglet Flashing on this job the item of greatest interest is the 1,000 ft. of Revere-Keystone 2-Piece Cap Flashing, the flashing system that has created quite a stir with architects, sheet metal contractors and engineers.

HERE ARE SOME OF THE REASONS WHY—

FREE WALL—It provides the roofer with an unobstructed wall face for the placement of the base flashing. Receiver is laid in during construction of wall, while the insert is snapped in only after all roof and base flashing work is finished.

STRAIGHT CLEAN LINE, PERMANENT GOOD LOOKS—Factory-bent to precise dimensions. This, with the one-inch locking tongue, assures alignment of receiver slots, uniform appearance.

PERFECT WEATHER-SEAL—Factory-formed angles on the receiver and insert cause latter to hug the base flashing, weather-seal effectively. Water cannot blow up behind flashing.

NON-LEAKING DAMLOCK — Requires no soldering except for special conditions. The interlocking copper-to-copper overlap creates a dam which prevents longitudinal travel of water and drains seepage to the face of the wall.

VERTICAL RECEIVER SLOT ON WALL FACE—Position of vertical receiver slot on face of wall eliminates possibility of the receiver slot being crushed shut by weight of masonry.

CAN BE DISASSEMBLED—Insert can be removed with a simple tool and used again, with no loss of neatness or snugness, when the built-up base flashing or roofing have to be repaired.

Find out about this newest method of flashing neatly, quickly, safely, positively. Send for descriptive literature today! Write Advertising Department.

FREE! For group showing—Instructive 16 mm motion picture in sound and color—"SHEET METAL IN BUILDING CONSTRUCTION." A "must" for every Architect, Building Owner, Spec. Writer, Sheet Metal Contractor and Mechanic. Write Revere Advertising Department.

*Patent No. 2,641,203 Other Pats. Pending

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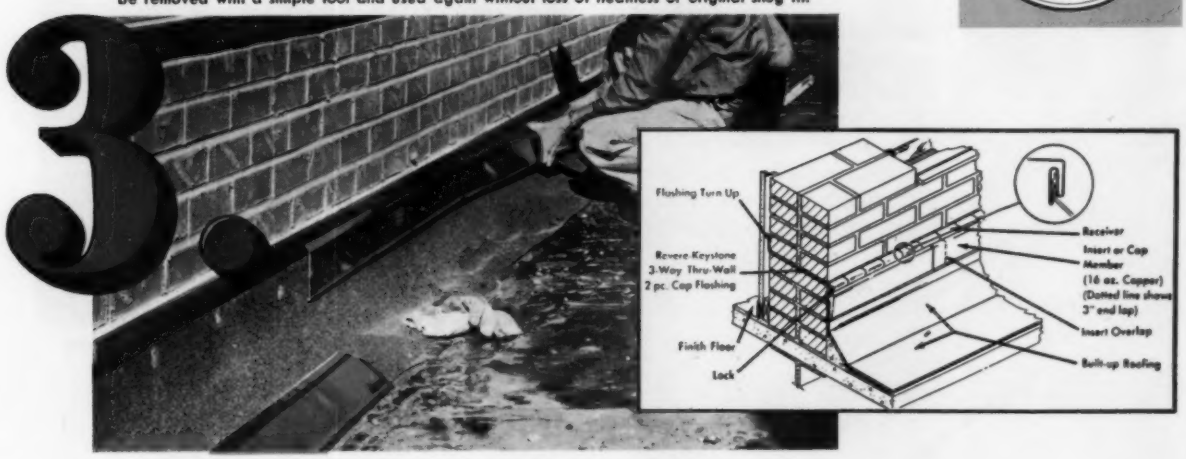
Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

Mills: Rome, N.Y.; Baltimore, Md.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Brooklyn, N.Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities, Distributors Everywhere.

SNAPPING CAP MEMBER INTO PLACE to form a perfect weather seal gives the job a nice, neat finish. And should built-up base flashing or roof need repairing, the insert or cap can be removed with a simple tool and used again without loss of neatness or original snug fit.



The motor with the built-in hush ...Westinghouse Life-Line A

Tests prove the Life-Line® "A" motor is the quietest available for air-conditioning applications and other places where motors must be quiet. Studies in soundproof laboratories prove the operating sound level of these Life-Line "A" motors is lower than any other standard motor.

Precision manufactured parts, dynamically balanced, assure dependable service. Possible vibration is minimized by rugged mounting of this smooth-running Westinghouse motor. Pre-lubrication coupled with Life-Line "A" fortified insulation and close-tolerance machining offers the nearest thing to a maintenance-free motor available.

For further information on the Life-Line "A" motor, call your Westinghouse sales engineer or write Westinghouse Electric Corporation, 3 Gateway Center, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-21996

YOU CAN BE SURE...IF IT'S Westinghouse

America is entering the ceramic tile age

Architects: John Graham Co. Assoc. Arch. and Alvin L. Wiedt Assoc.
Tile Contr.: Northwestern Marble Corp. Plate No. 532.

Architects: O'Dell, Hewlett and Luckenbach. Plate No. 266.

MOSAIC®

Architects: Holabird and Root and Burgee.
Tile Contr.: Allen Tiling Co. Plate No. 356.

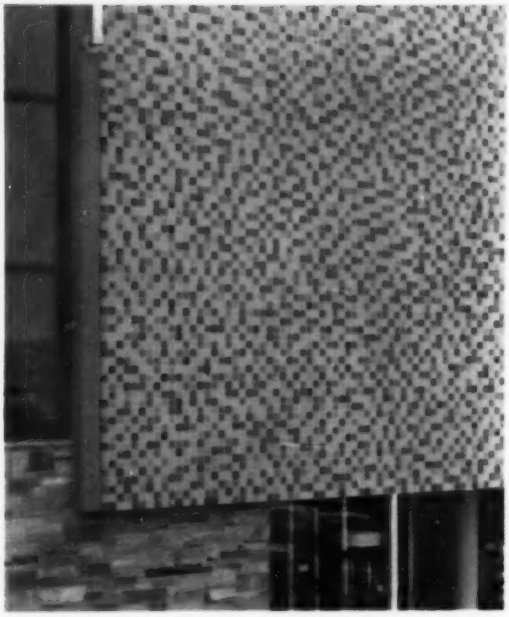
Designer: Cliff May. Tile Contr.: Bruner
Marble and Tile Co. Plate No. 542.

THE MOSAIC TILE COMPANY

CARLYLE QUARRY TILE

A. I. A. FILE NO. 23-A

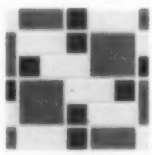
THE MOSAIC TILE COMPANY — CARLYLE QUARRY TILE — A. I. A. FILE NO. 23-A



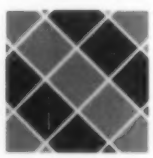
Architectural spirit preserved in Mosaic Ceramic Tile

Carlyle Quarry Tile a product of Mosaic—long recognized for its permanence, ease of maintenance and rich integral color—offers the designer still other distinct benefits. Its scale (sizes up to 9" x 9") makes it ideal for large floor and wall areas, or for interesting scale and color contrast in limited areas. Used indoors and out with today's window-walls, it visually integrates interior floors and exterior terraces into a single plane surface. The grid pattern formed by the grout lines establishes rhythmic design relationships with other structural elements. Color contrasts, stripes and accents in Carlyle Quarry Tile guide traffic, improve circulation to, from and within a structure. Possibilities are endless and fascinating.

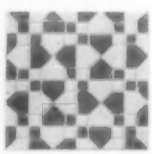
In homes and institutional, industrial and public buildings, floors and walls of Carlyle Quarry Tile give refinishing-free and replacement-free service for the life of the building. Maintenance is simple and economical. A natural clay tile in a wide choice of colors, Carlyle Quarry Tile is fire-proof, fade-proof, easy to clean. Its hard, tough body is unharmed by dirt, grease, acid and moisture. In certain colors, it is totally weatherproof (all colors suitable for exterior application in frost-free areas). An ideal combination of beauty, endurance and economy.



Pattern 127, Colors:
240 Suntan
250 Green
175 Pompeian



Pattern 133, Colors:
110 Navajo
140 Greytone



Cherokee Tile
Pattern 300, Colors:
240 Suntan
175 Pompeian

In addition to squares and oblongs in a wide range of sizes, the Carlyle Quarry Tile line includes Cherokee Tile—a casually irregular cushion edge tile with distinctive hand-crafted appearance. The natural clay colors and shapes of Cherokee Tile form rich patterns in a smaller scale. The complete Mosaic line of ceramic tile includes Carlyle Quarry Tile, ceramic mosaics, glazed wall tile, All-Tile Accessories, a wide selection of decorated tile, Everglaze (textured hard glaze tile) and Faience.

Floors and Walls of Mosaic Ceramic Tile will contribute to a greater return on your clients' building investment. Maintenance cost is less than with any other material—in many cases by as much as 50%. And the original investment is reasonable.

With our recently expanded manufacturing and distribution facilites, we can fill your tile requirements promptly. A broad selection of tile is carried in stock locally in the Mosaic warehouses listed below. You and your clients are welcome to make full use of our showrooms and those of your tile contractor.

Carlyle Quarry Tile Colors	
NO. 250 BLUEGRASS GREEN	
NO. 130 CINNAMON a mellow brown shade	NO. 175 POMPEIAN a gay light buff
NO. 150 EGYPTIAN a rich blend of flashed buffs	NO. 170 RUSSET a vivid red-brown blend
NO. 140 GREYTONE medium grey with buff flashing	NO. 120 MECCA* a dark chocolate brown
NO. 240 SUNTAN buff with a warm golden tone	NO. 110 NAVAJO* a deep, warm red
NO. 160 ORIENTAL* a dark red flashed blend	NO. 200 TAUPE a blend of light and dark grey, flashed

*Impervious to moisture.

The Mosaic Tile Workbook for Architects, Form No. 218, is in Sweets. For additional data, write The Mosaic Tile Company, Dept. A, Zanesville, Ohio, or The Mosaic Tile Company, Dept. A, 829 N. Highland Ave., Hollywood 38, Calif.

Ask for:
Carlyle Quarry Tile Catalog, Form No. 159
Carlyle Quarry Tile Pattern Book, Form No. 221
Pacific Coast Quarry Tile Selection Folder, Form No. 216
Buildings of Today, Form No. 208
The Mosaic Tile Book of Beautiful Homes, Form No. 195

Carlyle Quarry Tile manufactured by The Carlyle Tile Company, Ironton, Ohio is available in all except the Western states. West of the Rockies, Carlyle Quarry Tile, in a regional color palette, is manufactured by The Jordan Tile Manufacturing Company, Corona, Calif., and is available through all Mosaic Pacific Coast warehouses.

MOSAIC®

THE MOSAIC TILE COMPANY

For free estimates on Mosaic Tile, see the yellow pages for your Tile Contractor, Ceramic

America's largest ceramic tile manufacturer
Member—Tile Council of America, Inc.
and The Producers' Council, Inc.

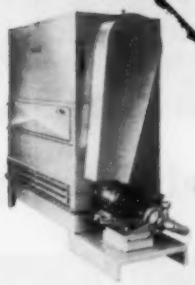
Showrooms, warehouses and factories from coast to coast:

Showroom-Warehouses: Atlanta, Baltimore, Boston, Buffalo, Chicago, Cleveland, Corona, Cal., Dallas, Denver, Detroit, El Segundo, Cal., Fresno, Greensboro, E. Hartford, Hempstead, L.I., N.Y., Hollywood, Ironton, Ohio, Jackson, Miss., Little Rock, Matawan, N.J., Miami, Milford, Conn., Milwaukee, Minneapolis, New Orleans, New York (Showroom only), Philadelphia, Portland, Rosemead, Cal., Salt Lake City, San Antonio, San Diego, San Francisco, Santa Clara, Cal., Seattle, Tampa, Washington, D.C., Zanesville, Ohio.

Representatives: Birmingham, Cincinnati, Kansas City, Oklahoma City, Pittsburgh, St. Louis.

Factories: Zanesville and Ironton, Ohio; Matawan, N.J.; Little Rock, Ark.; Jackson, Miss.; Corona and El Segundo, Cal.

Don't put a FIRETRAP on the roof



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- **Quiet Operating**—with no disturbing roars or heavy vibrations. Precisely balanced fans, heavy metal construction, tight assembly and mastic interior coating combine to assure smooth operation with a minimum of noise.
- **Long Lasting**—built of quality materials down to the smallest screws and bolts. Mastic coating and "Lektro-Tektor" bar in sump tank fight off corrosion, and years of service to the unit.
- **Compact and Unobtrusive**—for out-of-sight installation in the smallest possible space. Can be installed indoors or outdoors.

Write today for information on these and other air conditioning and heat transfer units in the complete Marlo line of quality equipment.

SEE OUR BULLETIN IN SWEET'S

MARLO coil co.

SAINT LOUIS 10, MISSOURI

Quality Air Conditioning and Heat Transfer Equipment Since 1925

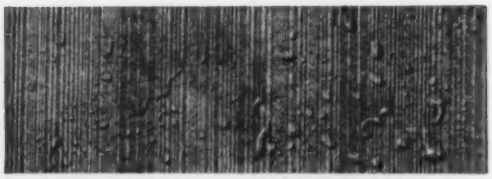
LIGHT, BRIGHT, ENDURING... a credit to good planning

Built with K&M Asbestos-Cement Siding Shingles and Asphalt Roofing Shingles, this home becomes a lifelong tribute to the architect's judgment in specifying materials of lasting quality.

To the owner, and to everyone else who admires the house, K&M Siding Shingles, with their bright modern colors, promise years of striking beauty. When applied to produce clear and pronounced horizontal shadow lines, K&M Shingles give houses a sleek, modern look. Made of asbestos fiber and portland cement, they won't burn, rot, or corrode, and they never need protective painting. They become harder with age . . . last the life of the house.

The perfect complement to K&M Siding Shingles is, of course, K&M Asphalt Roofing Shingles... built to the same high standards of quality. With a rainbow of colors available, K&M Asphalt Roofing Shingles enhance any style of architecture. And—they're rugged and long-lasting.

Read more about K&M Shingles in the Architectural File (Sweet's). Also send for samples and for answers to specific questions.



SILICONED TO CARRY OFF WATER-BORNE DIRT
K&M Siding Shingles are silicone-treated. Thus water "balls up", rolls off, doesn't easily gain a foothold to produce unsightly siding streaks.

K·M
BEST IN ASBESTOS

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3325 Wilshire Boulevard
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OF COURSE

with 35

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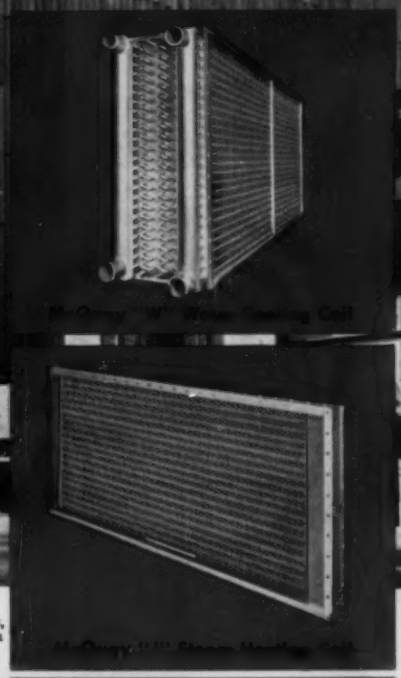
RIPPLE FIN COILS



McQuay "W" Water Cooling Coil

McQuay "J" Steam Heating Coil

ARCHITECT ..... Victor Gruen Associates, Beverly Hills, California

MECHANICAL ENGINEER ..... Ralph E. Phillips, Inc., Los Angeles, California

MECHANICAL CONTRACTOR .... J. Herman Co., Inc., Los Angeles, California

The new, completely air conditioned Tishman Building is an example of the versatility of McQuay heating and cooling coils, as it was necessary to design this flexible system so that it would meet the space requirements of future tenants as the building became leased. McQuay heating and cooling coils were used in central supply systems located on every other floor which supply hot and cold air to a duct system which passes through the central part of the building. As floor space was rented, lateral duct run-outs were installed to precisely and economically serve the areas occupied. There is a McQuay heating or cooling coil to exactly meet the requirements of every heating, cooling or air conditioning job—and do it efficiently and economically with the lowest possible investment. Years of experience, years of research provide the know-how for which McQuay is famous.

McQuay "W" water cooling coils also utilize the famous Ripple Fin and staggered tube construction. Extremely flexible to expansion and contraction with supply and return connections at one end, for long life and simplified piping and service. Also available in a wide variety of sizes, styles and capacities, 1 to 10 rows. 23 McQuay "W" coils were used on the Tishman system.

McQuay "J" Steam heating coils have the exclusive Ripple Fin and staggered tube construction. Designed for use on heating, ventilating and special process applications, and are especially suitable for modulated steam control with uniform discharge temperatures. Extremely flexible under expansion and contraction. Made in a wide variety of sizes, styles and capacities to meet the requirements of every application. 12 McQuay "J" coils were used on the Tishman system.

McQuay INC.

REFRIGERATION
HEATING
AIR CONDITIONING

1605 Broadway St., N.E., Minneapolis 13, Minnesota · Representatives in all principal cities

McQuay Means Quality

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In the modern hospital, special equipment requirements are the rule rather than the exception. That's why when time came to select equipment for the new Lynchburg General Hospital, the choice was Casework by St. Charles.

St. Charles' quality and dependability played a large part in Lynchburg General's decision.

St. Charles' skilled personnel and modern construction facilities are at your service—ready and able to help you meet any problem of casework or design. Your inquiries will receive prompt attention.

A request on your letterhead will bring our 40-page catalog "St. Charles Hospital Casework"

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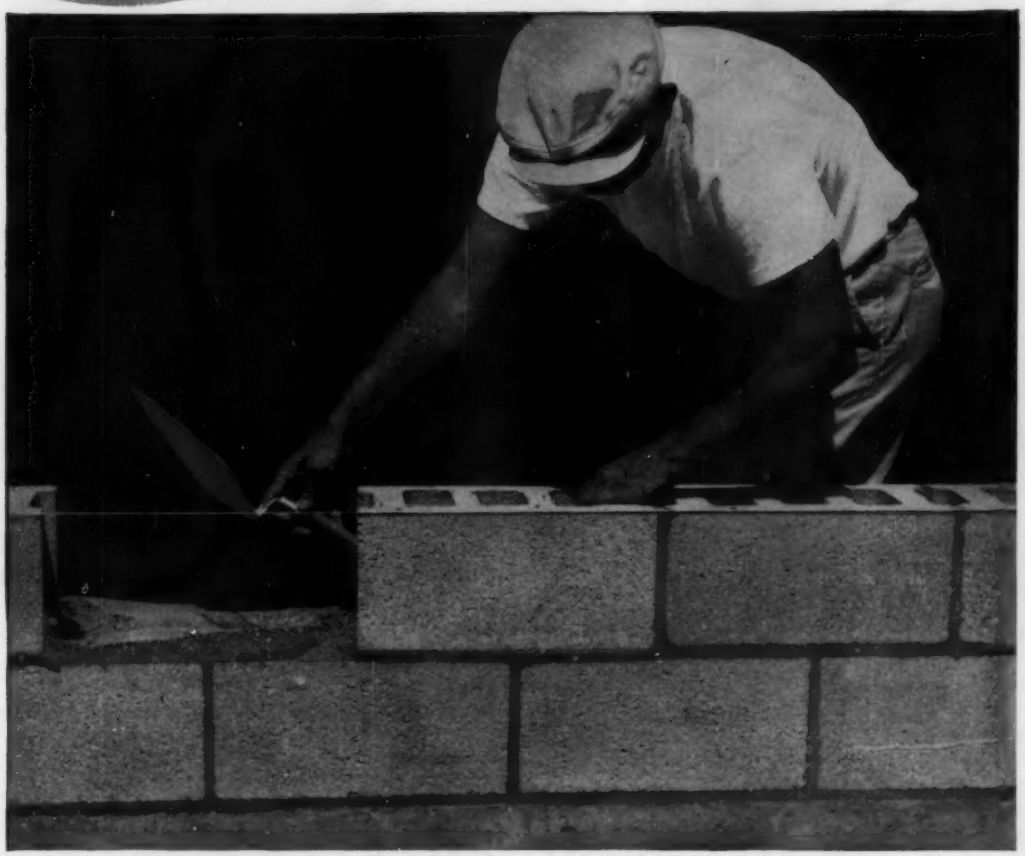
casework • sinks and counters • special purpose units

ST. CHARLES MANUFACTURING COMPANY, DEPT. ARH-9, ST. CHARLES, ILLINOIS

BRIXMENT

Better Mortar for Blocks



STAYS WORKABLE LONGER

To get a good bond between concrete blocks, the bricklayer must shift and adjust each block to its final position, before the mortar has stiffened.

Brixment makes it easier for the bricklayer to do this. Brixment mortar stays plastic longer in the wall because it has high water-retaining capacity, which provides greater resistance to the suction of the block. This gives the bricklayer more time to adjust and shift the block to its final position, while the mortar is still plastic enough to form a good, tight bond.

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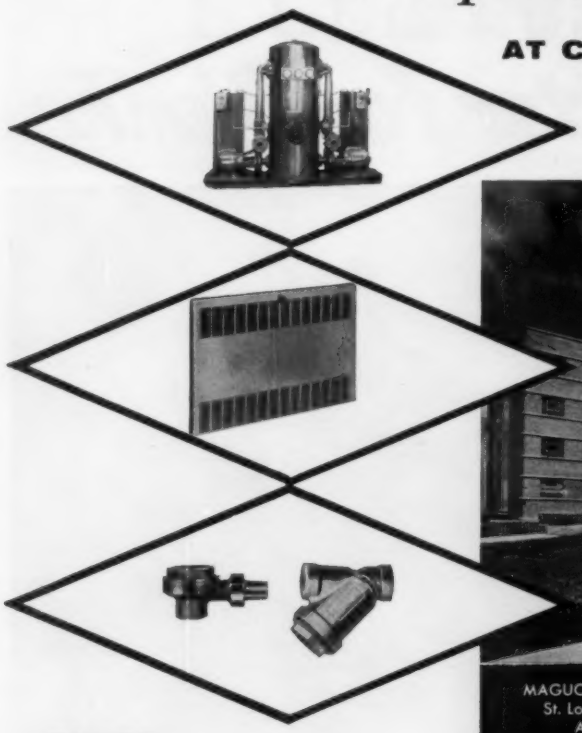
All Pumps, Convectors and Steam Specialties by DUNHAM-BUSH



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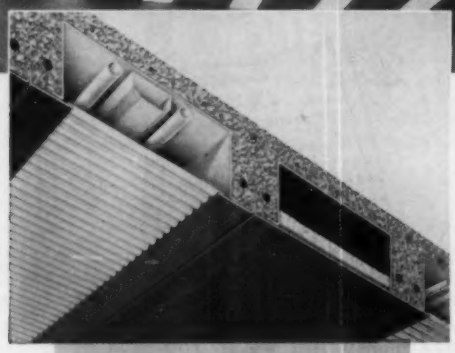

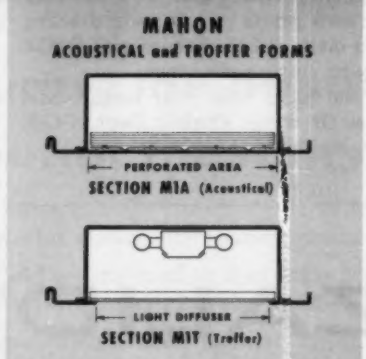

Above is the Ceiling of the Auditorium in the Eugenia Mettetal School, Detroit, Michigan. It is one of 50 rooms with Mahon Acoustical-Troffer Ceilings. Shreve, Walker & Associates, Inc. Architects. Alfred A. Smith, Inc., Gen. Contractors.

. . . for Acoustical Ceilings with Recessed Lighting!

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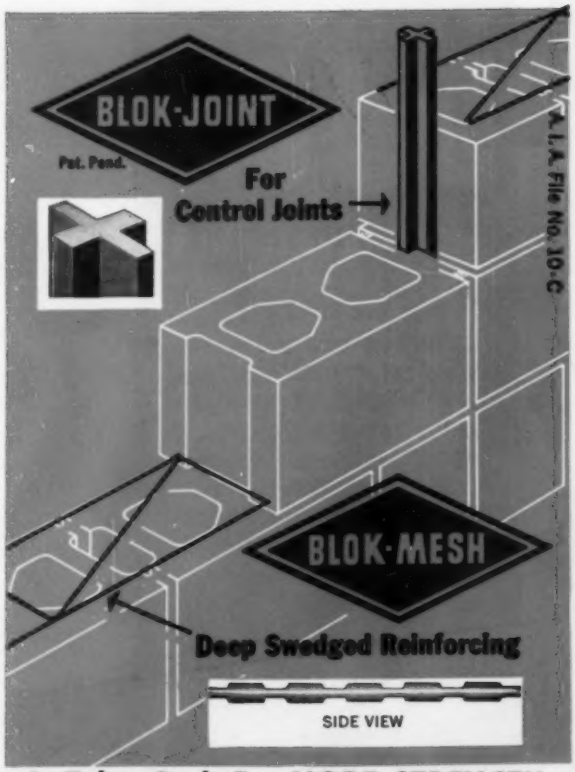

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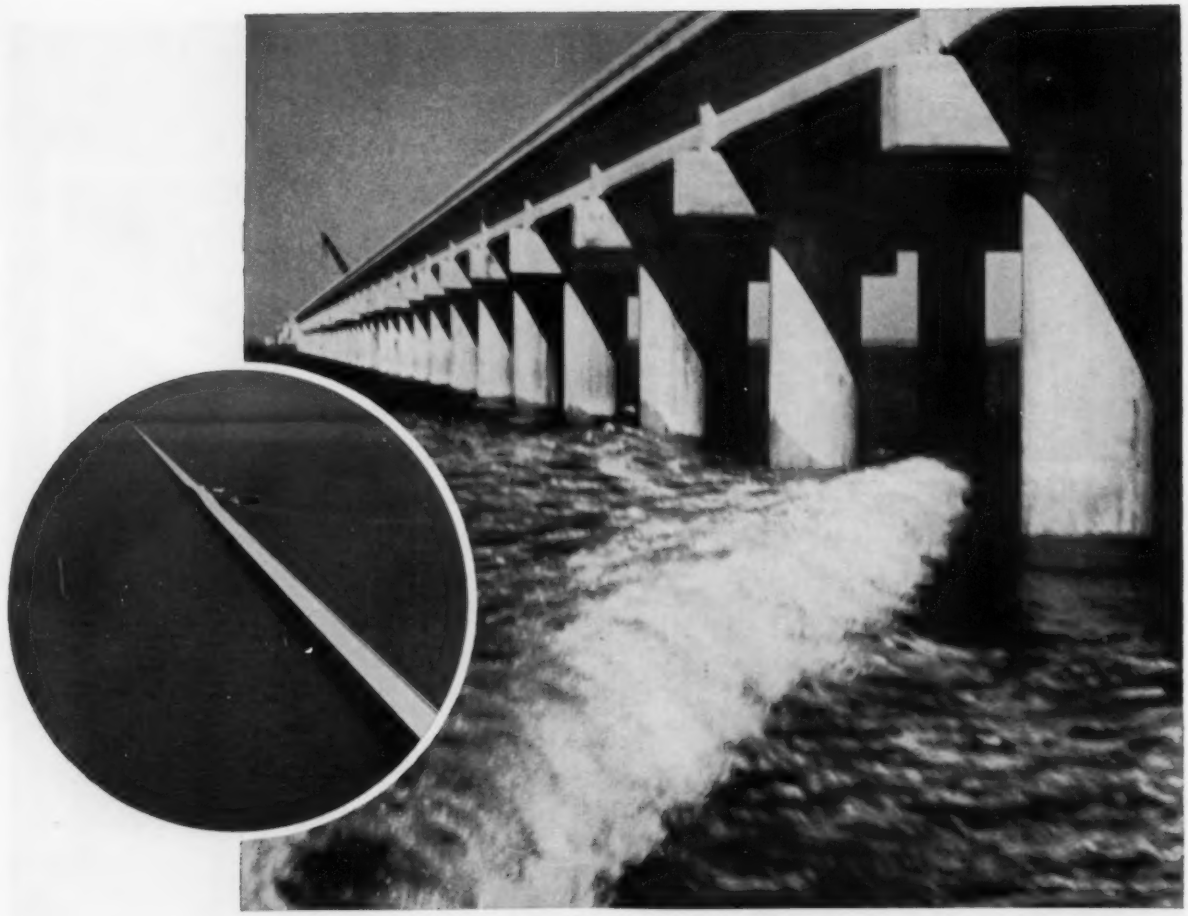

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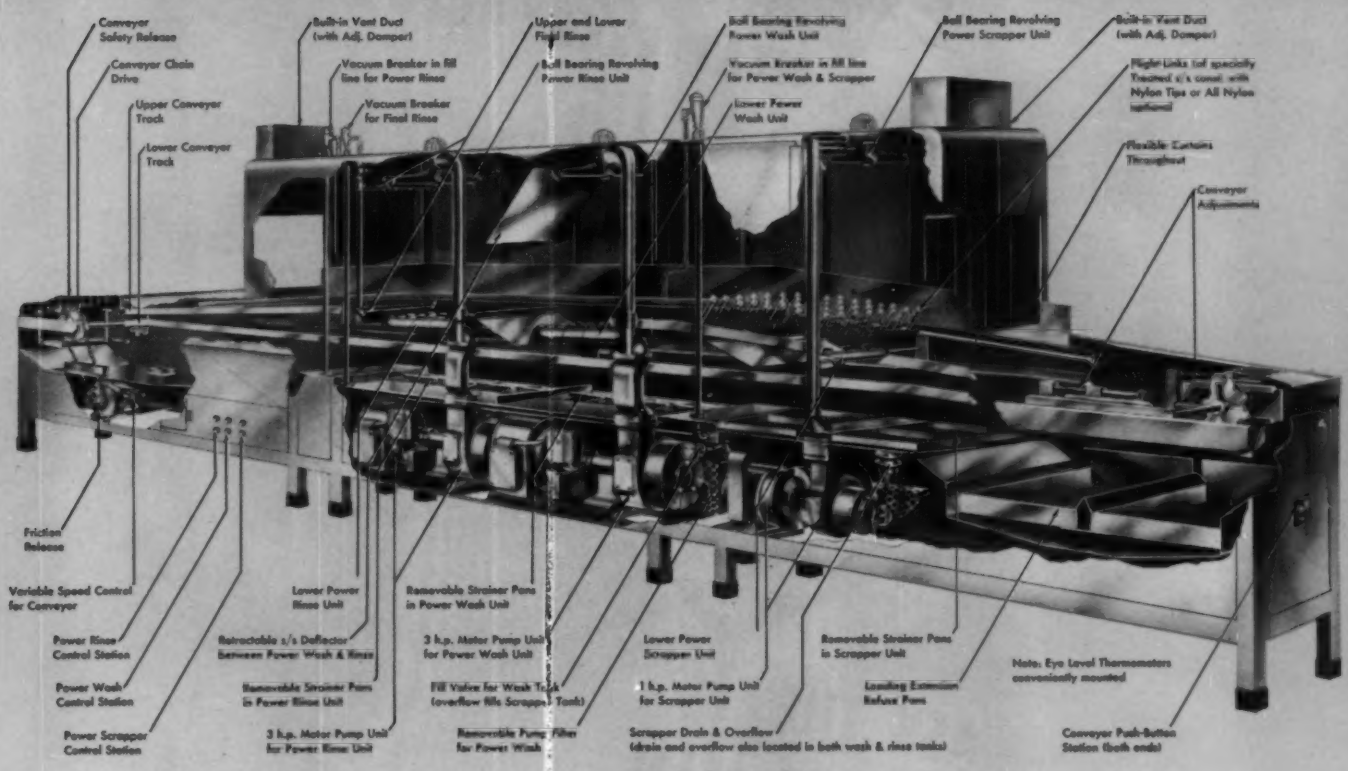
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Lower Power Wash Unit
Ball Bearing Revolving Power Scrapper Unit
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Flexible Curtains Throughout
Conveyor Adjustments
Friction Release
Variable Speed Control for Conveyor
Power Rinse Control Station
Power Wash Control Station
Power Scrapper Control Station
Lower Power Rinse Unit
Retractable s/s Deflector Between Power Wash & Rinse
Removable Strainer Pans in Power Rinse Unit
3 h.p. Motor Pump Unit for Power Rinse Unit
Removable Strainer Pans in Power Wash Unit
3 h.p. Motor Pump Unit for Power Wash Unit
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1 h.p. Motor Pump Unit for Scrapper Unit
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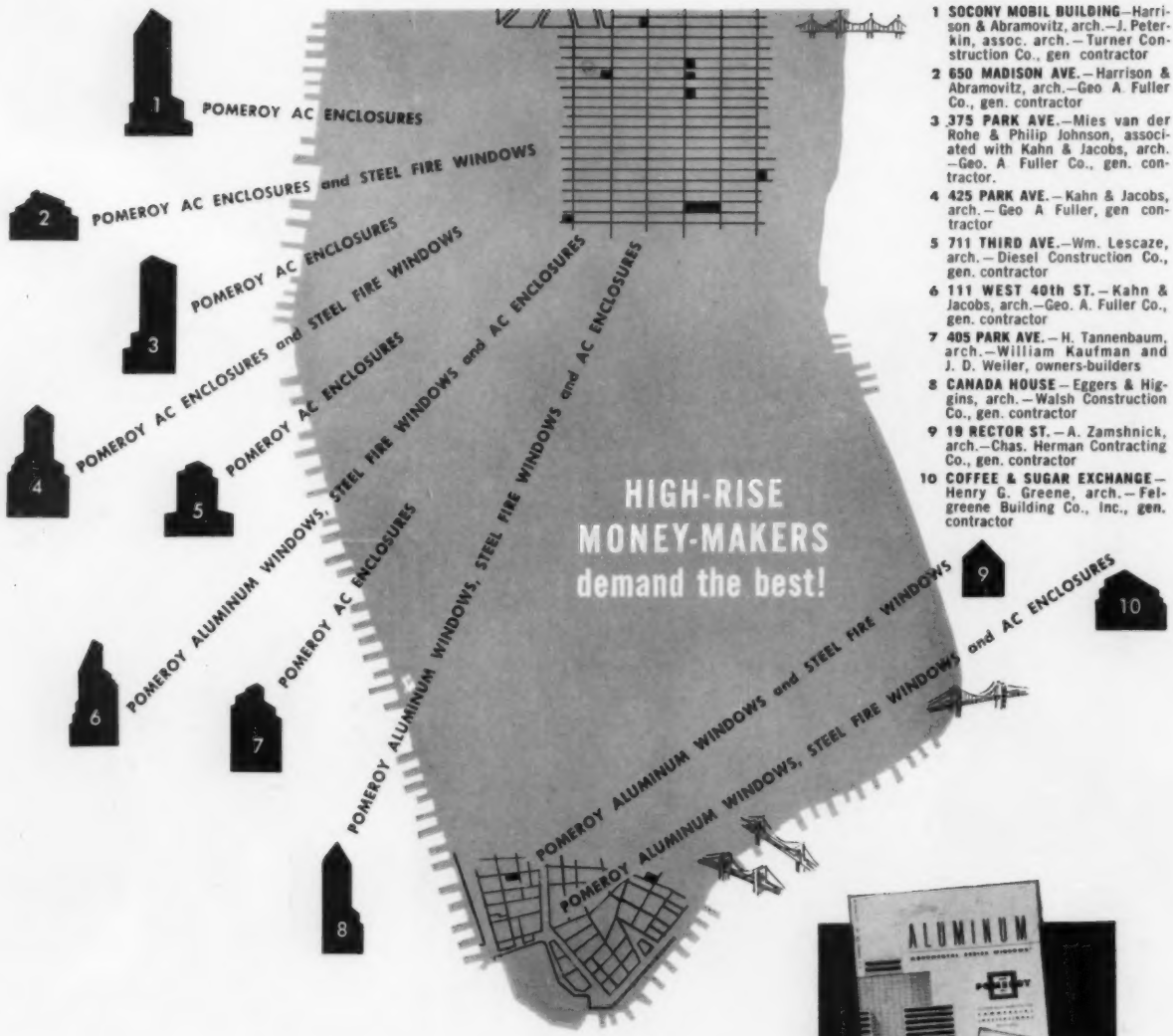
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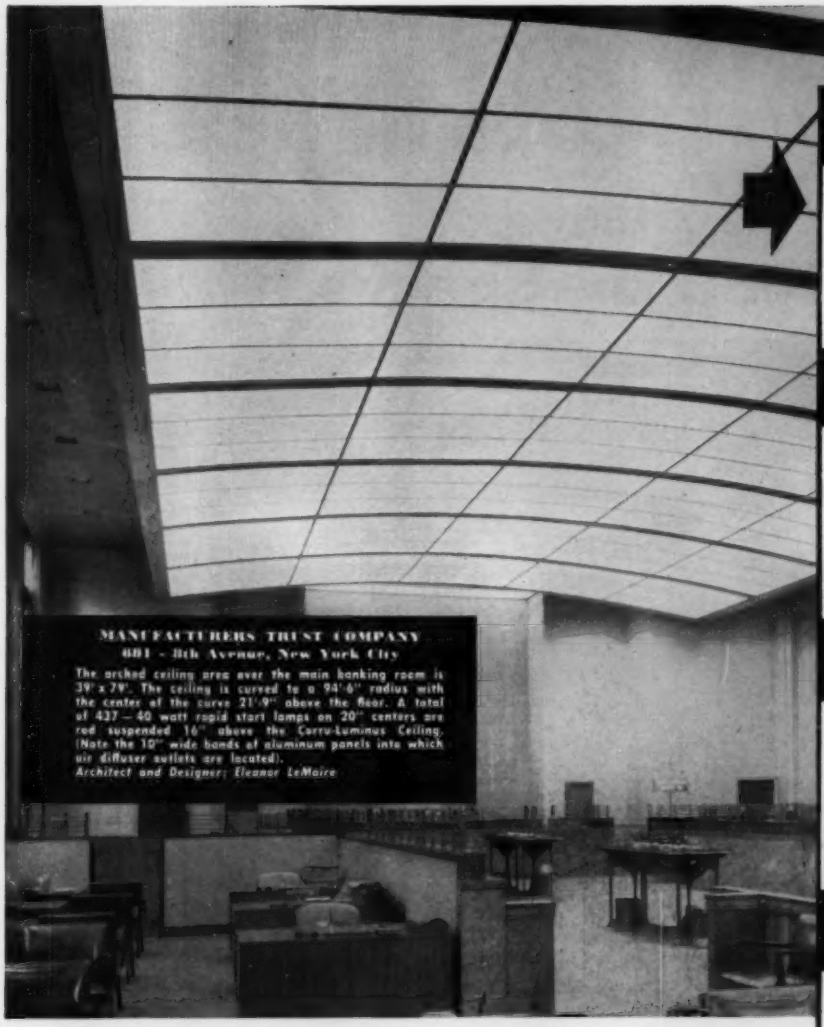

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Architect and Designer: Eleanor LeMaire

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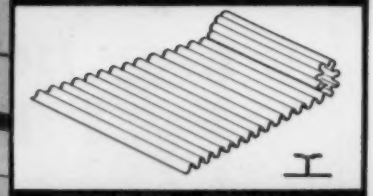

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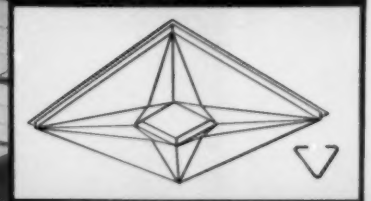

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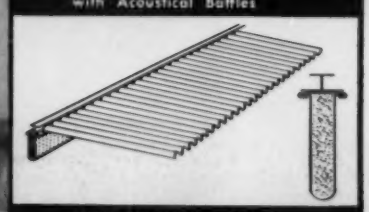

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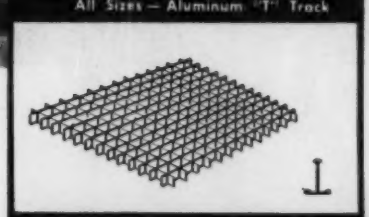

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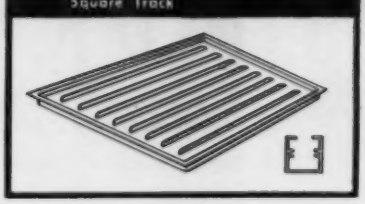

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NATION'S LEADING PRODUCER OF LUMINOUS CEILINGS

Luminous ceilings inc.

Home Office: 2500 W. North Ave., Chicago 47, Ill. . . . ARmitage 6-2800

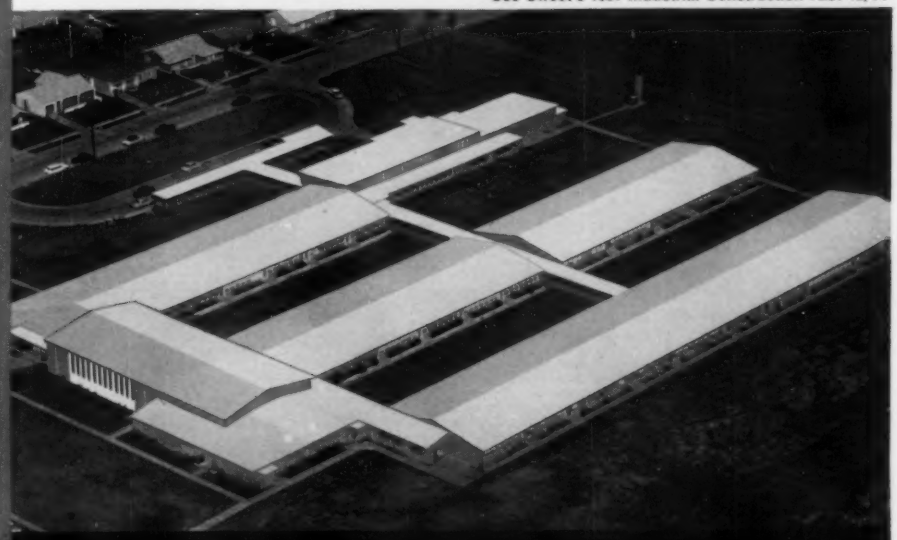
. . . District Offices in Principal Cities. . . .

THE BIG DIFFERENCE IN ROOFING

may be in the bond that backs it!

See Sweet's 1957 Industrial Construction File: 4a/Fr

DEEP WATER ELEMENTARY SCHOOL
OWNER:
Deer Park Independent School District
ARCHITECT:
Emory S. White
2017 S. Shepherd
Houston, Texas
GENERAL CONTRACTORS:
1st Section:
Marko Construction Co.
6714 Long Drive
Houston, Texas
2nd Section:
Marshall Construction Co.
4009 Center Street
Houston, Texas
ROOFING CONTRACTOR:
Atlas Roofing Co.
515 Milby St.,
Houston, Texas



FRY ROOFING

A bond that insures payment for roofing materials only, or for any amount less than cost of materials PLUS labor, in the event of roof failure, is called a "penal sum" bond. Fry Roofing is backed by FULL VALUE bonds, covering cost of roofing materials AND their application, under conditions specified in each bond.

FULL-VALUE Bonded for 20 YEARS!

FRY—world's largest manufacturer of asphalt roofing and allied products—is the only roofing manufacturer who can truthfully claim: "Over 20 years without a single roof failure." That's one reason why FRY takes a long step further than other manufacturers in bonding its roofing. The FRY bond—whether for 10, 15 or 20 years—covering both asphalt shingle and built-up roofing—provides FULL VALUE coverage, includes labor costs as well as cost of materials.

There you have two good reasons why FRY Roofing—1016 squares of it—was chosen for the beautiful new Texas school pictured above. May we suggest that you specify a Fry FULL VALUE Bonded Roof on your next job? For condensed specifications on FRY built-up or asphalt shingle roofing, see your Sweet's. For complete details and specimen BOND, write FRY today!

LLOYD A. FRY ROOFING COMPANY

World's Largest Manufacturer of Asphalt Roofing and Allied Products

19 Roofing Plants Strategically Located Coast-to-Coast

GENERAL OFFICES: 5818 Archer Road, Summit (P. O. Argo) Illinois
ROOFING PLANTS: Summit, Ill. • Portland, Ore. • Houston, Texas Morehead City, N.C. • Compton, Cal. • Kearny, N.J. • Detroit, Mich. • Irving, Texas • Minneapolis, Minn. • York, Penn. • N. Kansas City, Mo. • Brookville, Ind. • Jacksonville, Fla. • San Leandro, Cal. • Stroud, Okla. • Memphis, Tenn. Robertson, Mo. • Waltham, Mass. • Fort Lauderdale, Fla.

Jamison announces flexidor*...

NEW flexible batten door

All-neoprene batten door designed for use with power trucks

*Jamison Trademark

Flexidor is light and resilient to absorb and dissipate the shock of impact; reinforced door noses add strength, prevent buckling or wrap around on impact. Free-swinging door suspension provides minimum impact resistance. Jamison two-way gravity cam hinges assure fast closing.

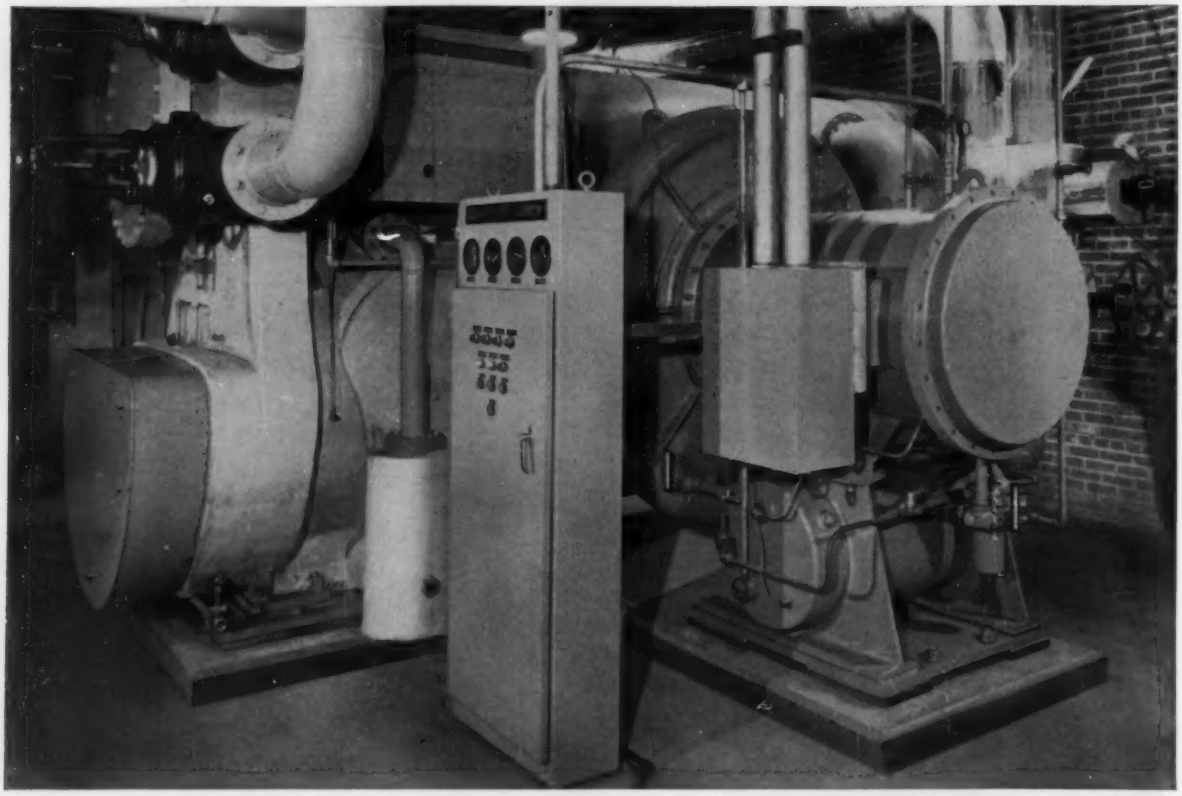
Flexidor is available in a full range of sizes for use in new construction or to replace rigid battens. Complete information is available from the Jamison Cold Storage Door Co., Hagerstown, Md.

JAMISON

HAGERSTOWN, MARYLAND, U. S. A.

More JAMISON Doors are used by *more* people than any other Cold Storage Door in the world.

AMERICAN BLOWER AIR CONDITIONING



Two 350-ton American Blower Tonracs supply chilled water for the entire Sheraton air-conditioning system.

Tonrac®—heart of the air-conditioning system in Philadelphia's new Sheraton Hotel

To help extend a traditional Sheraton welcome to travelers in the City of Brotherly Love, engineers, builders and mechanical contractors selected two American Blower Tonrac Centrifugal Refrigerating Machines to supply the air-conditioning system in the new Sheraton Hotel.

They chose Tonracs on the basis of their high capacity; their quiet, vibration-free operation; and American Blower's engineering know-how and reputation as a leader in the air-handling and air-conditioning field. The Tonracs supply all the chilled water for 1,000 individual American-Standard Remotaire room units that air-condition 5,700,000 cubic feet of space.

When your client's plans call for air conditioning—call our nearest branch office for invaluable product information. American Blower Division of American-Standard, Detroit 32, Michigan. In Canada: Canadian Sirocco products, Windsor, Ontario.

The 22-story Sheraton Hotel, Philadelphia. Tonracs, installed on the fourth floor, operate so quietly that guests on adjoining floors never hear a sound.

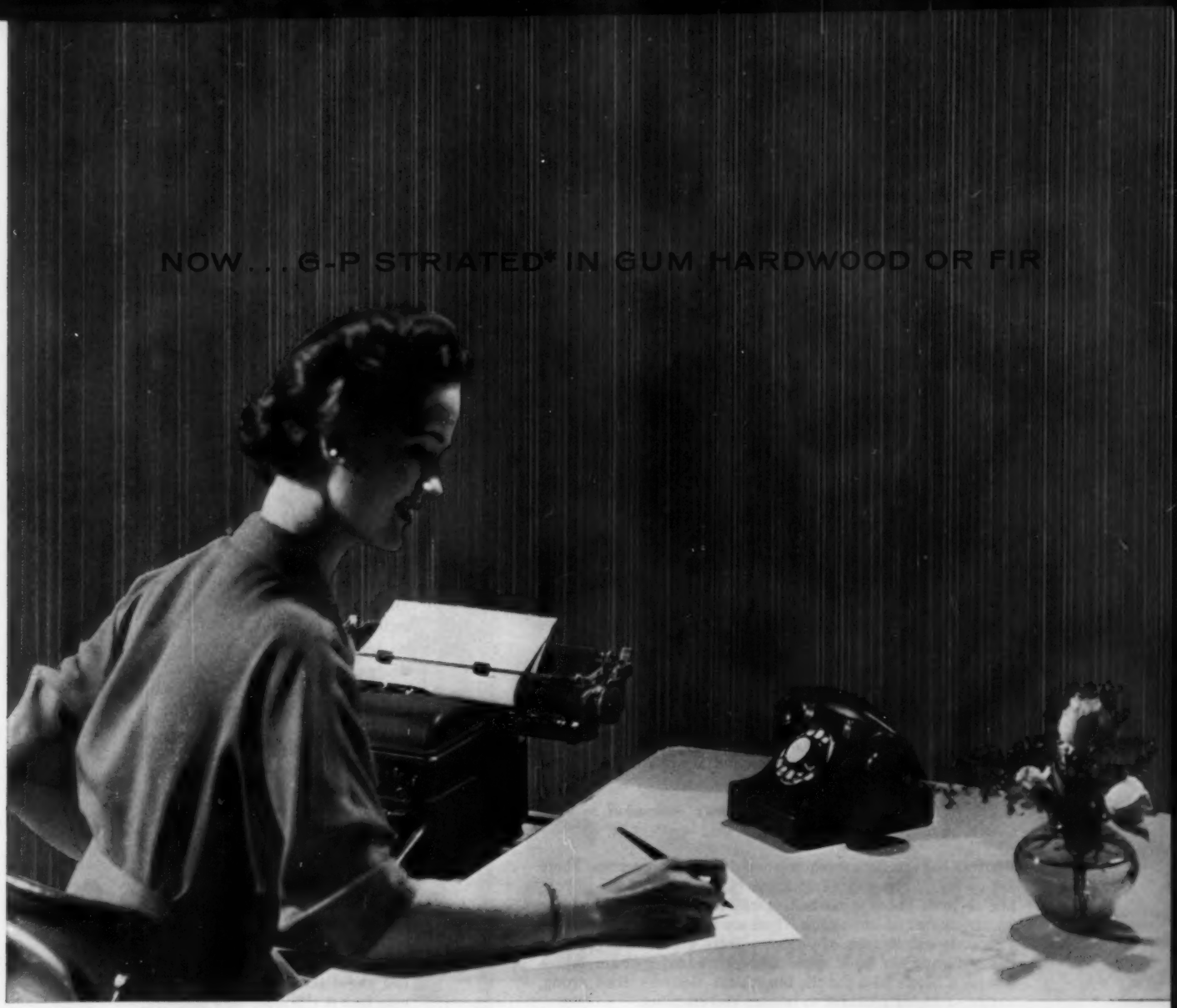
Building Credits

Architects: Perry, Shaw, Hepburn & Dean
Consulting Engineers: Slocum & Fuller
Builders: McCloskey & Co.
Mechanical Contractors: Ambrose-Augusterfer Corp.

AMERICAN BLOWER

Division of AMERICAN-Standard

QUALITY PROTECTS YOUR INVESTMENT . . . AMERICAN-Standard QUALITY IS AVAILABLE AT NO EXTRA COST



for straight, clean, vertical lines... G-P Striated*

SMOOTH

G-P Striated is the *smoothest* textured plywood on the market. Striations are splinter-free, easier to finish—clear, stained or painted.

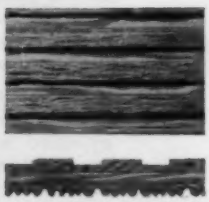
CLEAN-CUT

Every shadowline in G-P Striated is cleanly rounded to uniform depth. A pleasing overall repeat pattern alone or in combination with glass, plaster or other materials.

BACK-GROOVED

This exclusive G-P feature — with equal plies on face and back — stabilizes, making G-P Striated flexible and warp resistant.

Specify G-P Striated for *your* next "low bid" project where good appearance is a must. Panels: 4'x8' and 4'x7'. Squares: 12", 16" in Fir; 12", 16", 24" in Gum.



Back and end views of G-P ingenious balanced construction which removes equal volume of wood from back and face.

GEORGIA—PACIFIC
CORPORATION

For literature on new G-P Striated paneling send this coupon to

GEORGIA-PACIFIC CORPORATION
Dept. AR957, 60 East 42nd Street, New York 17, N. Y.

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ADDRESS_____

CITY_____ STATE_____

*Pat. No. 2,782,468

SPECIFY

BESTWALL®

GLASS-FIBERED PLASTER

—JOB-TESTED AND PROVEN SUPERIOR!

Bestwall Glass-Fibered Plaster—a revolutionary new concept in plaster—has won enthusiastic acceptance from plasterers in the field.

Job-tested on buildings throughout the Middle West, Bestwall has clearly established its points of superiority over ordinary plasters fibered with sisal or hemp:

- *Its filaments of Fiberglas* weigh only 1/150 to 1/200 as much yet are as strong on an equal basis as many steels*
- *It contains 30 to 40 times as many fibers*
- *Its glass fibers are cut to uniform, controlled length, as contrasted with the random ¼ to 4 and 5-inch lengths of sisal or hemp fibers*
- *It's faster, smoother, cleaner and more economical to work with on the job*

Bestwall has excellent spreading and darbying properties. There are no long fibers to foul up mixer blades or build up on box, hoe or hod. There is no balling of fibers on walls to require backtracking and smoothing. There are fewer plaster droppings. The even distribution of uniform fibers in Bestwall provides better keying on both metal and perforated gypsum lath—insures a better base for the finish coat. Bestwall dries strong, hard and highly resistant to impact and cracking.

With all its fine-quality characteristics, and the savings it makes possible on the job, Bestwall Glass-Fibered Plaster *costs no more* than other fibered plasters. Here is an efficient, economical, *base-coat* plaster which eliminates the need for specifying extra-fibered or double-extra-fibered plasters on any job. For complete specification details, contact the Bestwall Certain-teed Sales Office nearest you.

*Trademark OCFCorp.

We have designated all of our fibered plaster to be glass-fibered, since our men all say that it handles easier under the trowel and keeps a more uniform surface, while the tenders don't have trouble with the fibers collecting on the blades of the mixer.

Hurd & Simmons,
Waterloo, Iowa

•

Our experience with this material which was used on metal lath and clay tile was entirely satisfactory. The glass-fibered plaster applied smoother than manila-fibered plaster. There were no balls or clumps of fiber in the plaster. It rodded and darbied better than manila-fibered.

Stanley J. Sleichert,
Chicago, Ill.

•

This is to commend you on your fine new product, glass-fibered plaster. After having used several hundred bags of your glass-fibered plaster in lieu of manila-fibered plaster, we have noted several qualities about it that are definite advantages to the plastering industry.

Lee Bros. Contractors,
St. Louis, Mo.

FIREPROOF GYPSUM
BESTWALL®
BUILDING PRODUCTS

Manufactured by Bestwall Gypsum Company—sold through

BESTWALL CERTAIN-TEED SALES CORPORATION

120 East Lancaster Avenue, Ardmore, Pa.

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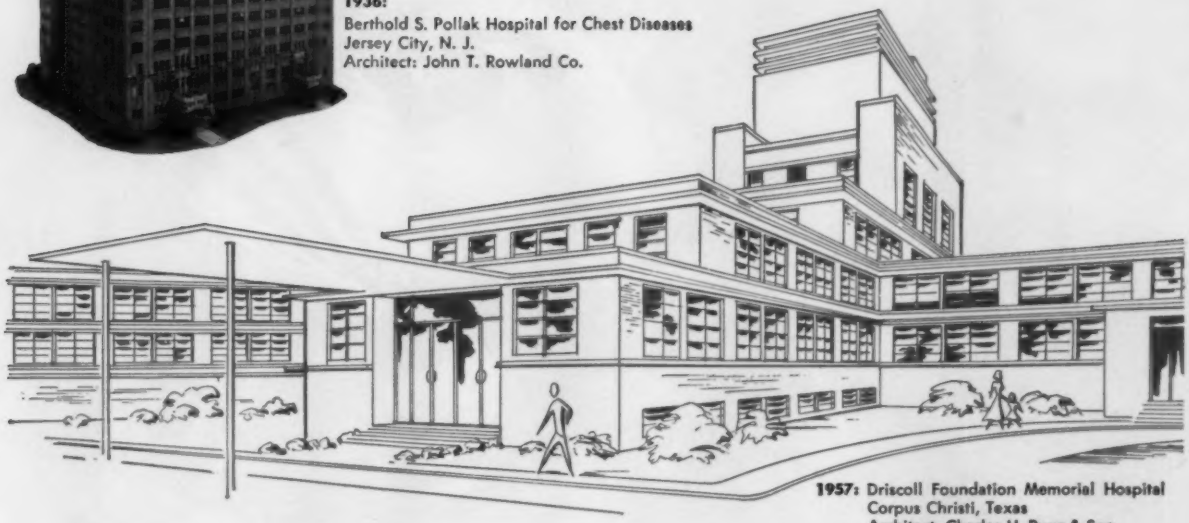
CHICAGO HTS., ILL.	DETROIT, MICH.	MINNEAPOLIS, MINN.	SALT LAKE CITY, UTAH
CLEVELAND, OHIO	EAST ST. LOUIS, ILL.	NIAGARA FALLS, N.Y.	TACOMA, WASH.

building design changes...

1936:
Berthold S. Pollak Hospital for Chest Diseases
Jersey City, N. J.
Architect: John T. Rowland Co.



1957: Driscoll Foundation Memorial Hospital
Corpus Christi, Texas
Architect: Charles H. Page & Son

but

KOPPERS COAL-TAR PITCH

is still the best roofing material

There's quite a difference between these two hospitals, one located in an urban medical center and the other having the design freedom characteristic of modern, suburban construction. But beyond mere location each is representative of its particular era. Their comparison illustrates the present trend to simpler, less ornamental design.

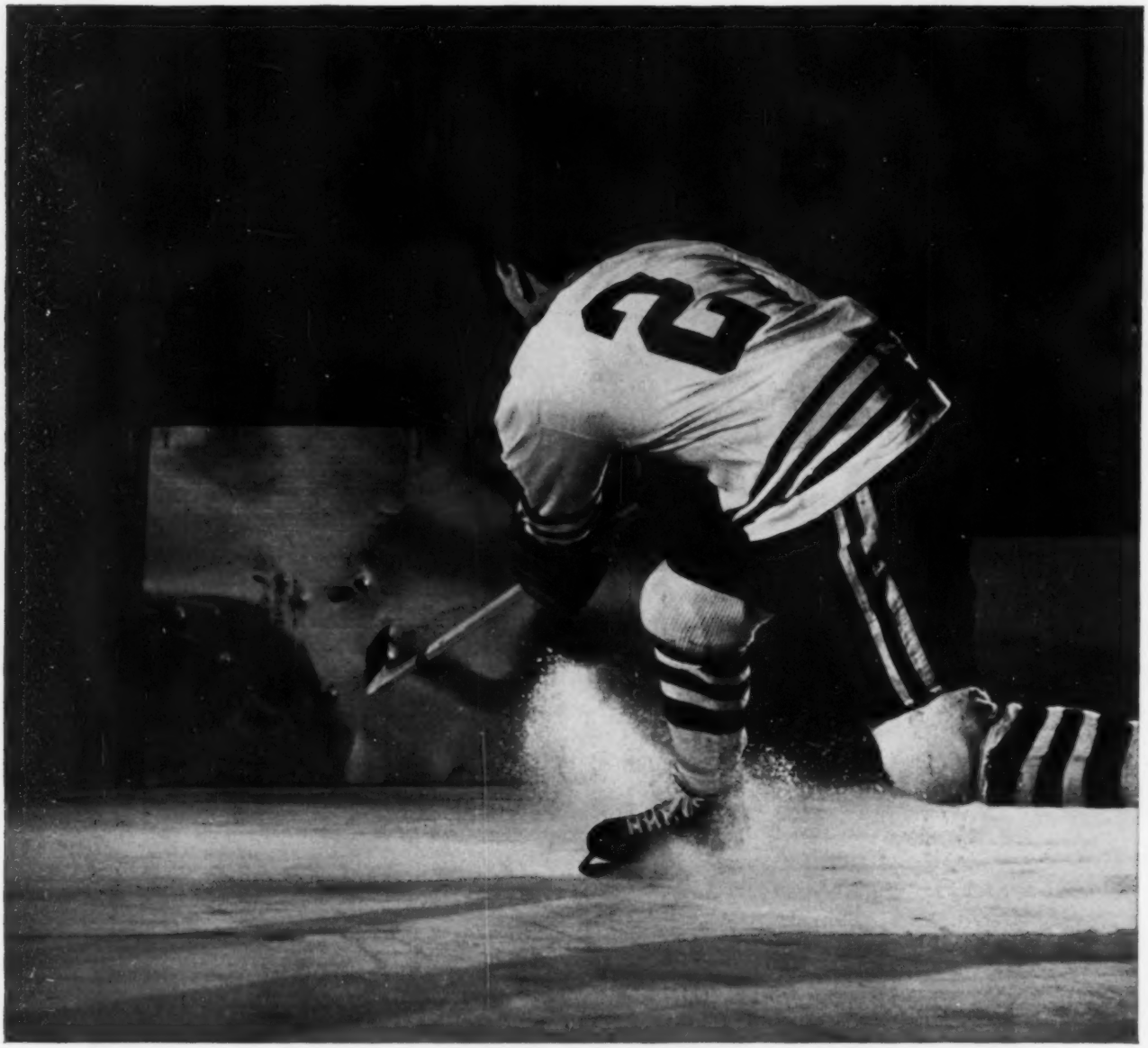
These buildings are identical, however, in one important respect: both flat roof decks are protected with Koppers Coal-Tar Pitch Built-Up Roofing. And it is because of outstanding service records, as typified by the Koppers Roof on the Pollak Hospital—*now beyond its 20-year bond period with no sign of repair required*—that architects are specifying this quality roofing material for modern buildings!

Whatever your present commercial, industrial or other non-residential design project, flat roofs are best protected with Koppers Coal-Tar Pitch Built-Up Roofing. For coal-tar pitch is the only roofing material with "cold-flow," the self-healing property that removes the threat which small surface checks and cracks pose to other roofing materials. This, plus its superior waterproofing quality, makes coal-tar pitch unequalled for long-lasting, trouble-free roofing protection.

Your local Koppers roofing specialist has a presentation, "The Long, Low Look" which contains useful design information for flat-roof buildings. He'll be glad to make an appointment with you and your engineering staff to review this helpful information on built-up roofing. Call or write Koppers Company, Inc., Tar Products Division, Pittsburgh 19, Pa. District Offices: Boston, Chicago, Los Angeles, New York, Pittsburgh, and Woodward, Ala.

KOPPERS

KOPPERS
COAL-TAR PITCH
BUILT-UP ROOFING



BLACKHAWK ACE FAILS TO FLAKE TI-CO®

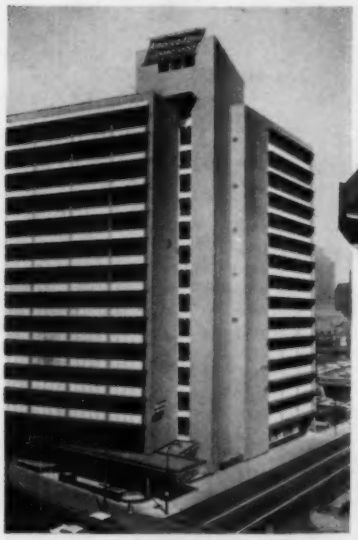
Captain Gus Mortson of the Chicago Blackhawks examines sheet of TI-CO after driving frozen puck into it. Plenty of dents but no evidence of flaking.

Gus Mortson, Captain of the famous Chicago Blackhawks, used his hardest driving shot in slamming a frozen puck into a sheet of Inland TI-CO galvanized steel. Time after time, at speeds up to 100 m.p.h., the puck banged into the sheet but the zinc coating on TI-CO stayed put . . . not a sign of flaking. This brutal test illustrates how TI-CO can take it—even when subjected to far rougher treatment than encountered in normal use. Further proof that TI-CO can withstand even the most severe fabricating operations or the toughest handling and still retain its protective zinc coating. No chance for rust to get a foothold.

For the Big Jobs Where Material and Labor Costs Run High, Sheet Metal Shops are Switching to Inland TI-CO!

More and more sheet metal contractors are finding that they can realize important savings in labor and materials by using Inland TI-CO Galvanized Sheets . . . especially on the big jobs.

TI-CO's non-flaking quality becomes increasingly important as the runs of fabricated components get longer. Many man-hours, both in the shop and on the job, are lost when the zinc coating on ordinary pot galvanized sheets flakes off in the lock-seamer and forming presses, or while the part is being installed. With TI-CO, made by the patented continuous process of galvanizing, the zinc coating stays put even under the most severe fabricating operations. Down-time due to zinc clogging of machines and lost labor caused by splitting of the base metal or failure of the coating, necessitating costly "make-overs," is eliminated.



Typical of large air handling equipment jobs on which TI-CO was used is the new western headquarters building of the America Fore Insurance Group recently completed in Chicago. Over 63 tons of TI-CO went into the ductwork for this modern, 15 story office building. Jim Mraz, Supt. of Narowetz Heating & Ventilating Company, sheet metal contractor on the job, is very enthusiastic about the way TI-CO performs both in the shop and on the site. "With TI-CO sheets we keep shop time down to a minimum and end up with a better looking, longer lasting installation," he said, "because the zinc coating on TI-CO just doesn't flake."

A good example of a specialty sheet metal job involving long production runs is a project recently handled by the Bloomer Heating & Ventilating Company, Chicago, Illinois, for the Ford Aircraft Engine Plant. The job consisted of 8,000 special insulating panels made by riveting sheets of TI-CO galvanized steel to both sides of a steel framework. These panels, packed with a heavy insulating material, were used to soundproof four cells where jet engines are tested. The 300 tons of TI-CO used for the project provided a durable, corrosion resistant surface for the panels that made painting unnecessary. Shop Superintendent, Ernest Ellis, in expressing complete satisfaction with TI-CO, said, "Its non-flaking quality paid off on our production line. The coating stayed put even under tough treatment by our automatic riveting machines."

Make certain you're getting maximum profit out of every sheet metal job you do, large or small. Look for the brand of non-flaking Inland TI-CO on every shipment of galvanized you receive.

TI-CO Galvanized Sheets are Readily Available!

The terrific demand for this high quality sheet has kept TI-CO in short supply since its development. Now, additional production facilities have been completed making greater quantities available.

TI-CO is available in cut sheets or coils, in gages 8 to 30 inclusive and widths as great as 60 inches. TI-CO comes with dry, oiled or chemically treated surfaces. Consult your local steel distributor or Inland representative for your needs.

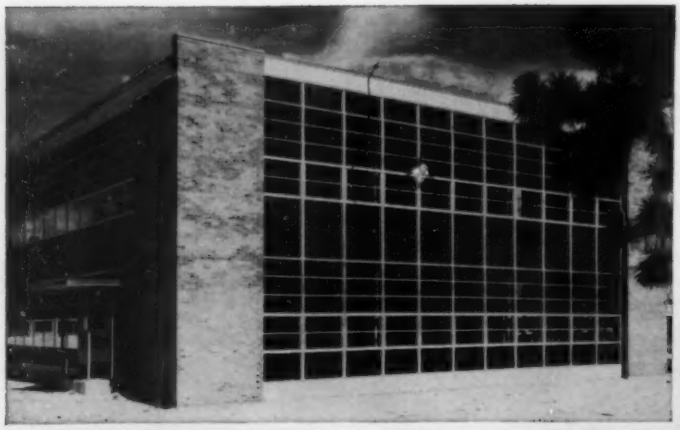
INLAND STEEL COMPANY

38 South Dearborn Street • Chicago 3, Illinois

Sales Offices: Chicago • Milwaukee • St. Paul • Davenport St. Louis • Kansas City • Indianapolis • Detroit • New York

INLAND TI-CO

Look for this brand—
your assurance of
non-flaking performance



Two views of AMERICAN LUSTRAGRAY windows in St. Petersburg Junior College, St. Petersburg, Fla. Architects create an attractive appearance by combining gray sheet glass with blue spandrels. **Architects:** *C. Dale Dykema & Associates, St. Petersburg.* **General Contractor:** *Corfar Construction Co.* **Glazier:** *St. Petersburg Glass & Mfg. Co.*

GLARE REDUCING SHEET GLASS

–american LUSTRAGRAY aids better learning

Large glare-free glass areas providing natural daylight are the primary source of obtaining good lighting. AMERICAN LUSTRAGRAY reduces glare approximately 50%. This gray sheet glass provides balanced brightness between artificial and natural light, protecting the eyes of both students and teachers. AMERICAN LUSTRAGRAY also reduces heat transmission, adding to comfort.

The appearance of LUSTRAGRAY has a very unique effect. Viewed from the exterior, it is dark enough to afford interior privacy and yet the occupant is provided "clear glass" vision and a feeling of spaciousness which act as a stimulant to learning.

Use AMERICAN LUSTRAGRAY sheet glass; it's economical as well as functional. *Write today for 4-page school catalog.*

In climates where maximum daylight is desired, use american LUSTRAGLASS and LUSTRACRYSTAL

MODERN GLASS *Best at a Glance*

american WINDOW *Glass* COMPANY PITTSBURGH, PA.

PLANTS: ARNOLD, PA. • ELLWOOD CITY, PA. JEANNETTE, PA. • OKMULGEE, OKLA.

WSW 6776

NEW FORMICA® WALL SURFACING FACTS

The development of new types of Formica adhesives permitting on-the-job application have greatly increased Formica's use in vast wall areas of commercial and institutional structures.

New techniques have put Formica laminated plastic into a price bracket only slightly higher than vinyl materials and less than ceramic tile.

Formica can be applied without heat or pressure directly over any smooth, dry surface such as ½" or ¾" plywood or particle board, cement plaster, steel troweled brown-coat, thoroughly dry white lime plaster, dry wall or poured concrete free of honey-comb.

Formica can be applied in full sheets up to 4' x 10'. A sheet can be applied vertically or for a 4' wainscot, can be used horizontally. It can be cut into random width planking or used in original designs by cutting into any shaped pieces and mixing colors.

Free! Idea Kit for Architects containing helpful information on wall application techniques, suggested uses, actual installations and new colors and patterns. Send today for your copy of this latest Formica information. Write Formica Corporation 4603-7 Spring Grove Avenue, Cincinnati 32, Ohio. In Canada: Arnold Banfield & Co., Ltd., Oakville, Ontario.

Customers buy Formica because it is a brand name they know and trust.

DEMAND THIS CERTIFICATION

We protect this faith in our product by certifying every sheet with a wash-off Formica marking. It is for your protection and guarantee that you are getting genuine Beauty Bonded Formica.

This mark certifies genuine

RUB OFF WITH LOTS OF BAR SOAP ON A DAMP CLOTH

Beauty Bonded FORMICA® Laminated Plastic Pays in Performance

Guaranteed by Good Housekeeping

Subsidiary of CYANAMID

Seeing is believing. If this wash-off identification is not on the surface, it's not FORMICA.

J. L. Hudson Co. store at Northland Shopping Center, Detroit, Michigan, served by 21 International Revolving Door Entrances.

Shopping Center . . . or Downtown

LOOK FOR THESE DOORS AT BUSIEST STORES!

With today's ever-growing trend toward "show window" entrances . . . and with store-wide comfort and convenience an ever-greater competitive factor . . . more and more stores are inviting traffic through their revolving doors. These doors insure an always comfortable interior "climate" that puts shoppers in a buying mood and keeps them coming back. "Always open" to permit entry with effortless ease — yet "always closed" against outside summer heat, chilling wintry drafts, and air-borne dust or dirt that causes costly merchandise soilage — these doors alone meet *all* entrance requirements for an all-ways modern retail store!

Typical of this growing trend is the experience of J. L. Hudson Co., Detroit. In its downtown store a total of 52 revolving doors — almost all of which replaced swing doors, have proved themselves indispensable . . . to set the pattern for the 21 Northland entrances as well as for the 14 revolving door entrances for the Eastland Shopping Center under construction. When next planning a retail store, either outlying or downtown location . . . or any structure where a modern, efficient entrance is required — consider the advantages exclusive to International Revolving Doors.

INTERNATIONAL
ALWAYS OPEN ALWAYS CLOSED
VAN KANNEL

Revolving Door Entrance Division

INTERNATIONAL STEEL COMPANY

1329 EDGAR STREET • EVANSVILLE 7, INDIANA

SEE OUR CATALOG IN SWEET'S ARCHITECTURAL FILE OR WRITE FOR COPY

Right Combination

FOR SALE AFTER SALE!

PRODUCED IN 41 DECORATOR COLORS PLUS SPARKLING BLACK AND WHITE

Here is the most wanted, therefore most *profitable* bathroom fixture combination you can offer. The industry's first Concave Lavatory* plus the famous Case Non-Overflow One-piece** Water Closet with the whispering flush.

The Case Wellington*** 300 Lavatory is the most wanted because it's the first *really comfortable* lavatory ever made for men and women. Gracefully curved for comfort and unusual beauty. Extra-spacious, wide, flat deck. Shown with art-designed wrought iron legs and towel bars all in one piece. Legs supplied in decorator colors and sparkling black and gold. You already know the Case One-Piece Water Closet and its customer-winning features like non-overflow bowl; safeguarding anti-syphon ballcock; pressurized cleansing rim flush; large water area; healthful seat height; time tested, with streamlined design in 41 colors and black and white. Ask your Case wholesaler or distributor or write:

by Case

*Available with Wrought Iron or Chrome Legs **Patented ***Patent Pending

CASE MANUFACTURING CORPORATION

33 MAIN STREET, BUFFALO 3, NEW YORK

Robbins Floor Products

OPERATION

NOW IT CAN BE TOLD!

For over two years Robbins has been auditing colors in a vast program of color research. This master plan has been a well-kept secret. It was directed by New York's foremost color consultants, Colorhelm, Inc., and American Color Trends, Inc., whose experts broke down the spectrum as never before. They lived color, analyzed color from every aspect of modern life, directed running of thousands of experimental samples, plotted color trends far into the future.

What is the result?

A completely re-styled
color line of vinyl. Nothing
like this has ever been done before.
We call these new colors

Career Colors

These are colors pre-tested, to satisfy America's color hunger for years to come.

Better client relations

CAREER COLORS strike a psychological balance in color preferences. They were selected and created with contemporary paints, wallpapers, fabrics, fixtures and furniture in mind. Wider color range than ever before . . . yet simpler and easier to handle . . . faster shipment from the factory . . . better stocking at the distributors . . . Career Colors are statistically *proved* by professional color analysts.

Available NOW in Career Colors: Solid Color Vinyls, Terrazzo Vinyls, Marble Vinyls.

But OPERATION COLOR is still going on! Soon all Robbins lines will be available in pre-tested Career Colors. Watch OPERATION COLOR work for YOU!

announces . . .

COLOR!

the boldest step in floor tile programs ever taken!

Robbins re-styles all lines in color!

ARCHITECTS: WRITE FOR YOUR COMPLETE FILE OF CAREER COLORS! NOW READY!

fabulous floors by

Robbins
FLOOR PRODUCTS, INC.
Tuscumbia, Alabama

Maxwell Dorne's Paradise Valley homes near Phoenix, Arizona, feature "color-glazed" interior walls and trim of Western Pine.

How Maxwell Dorne "color-glazes" Western Pines to help sell his houses

Here's a new idea in interiors. Designer-builder Maxwell Dorne calls it "color-glazing." The object is to produce a warm, distinctive color finish that still displays the natural grain of the wood. Let Mr. Dorne describe how he does it:

"Western Pines are the woods we usually turn to. First, you apply a flat undercoat in one color, wipe it off when tacky and let it dry. Then put on a color-glaze coat to which dryer has been added. You can add a second coat if desired. Finally, you finish it off with a coat of flat varnish.

"We can depend on Western Pines. They do what we ask of them. The combination of grain figure, knots and color—that natural texture and ability to hold a finish—fits in beautifully with our over-all design."

For more information on any of the Western Pine Region woods listed below, write: WESTERN PINE ASSOCIATION, Dept. 216-U, Yeon Bldg., Portland 4, Oregon.

The Western Pines

Idaho White Pine
Ponderosa Pine
Sugar Pine

and these woods from the Western Pine mills
WHITE FIR · INCENSE CEDAR
RED CEDAR · DOUGLAS FIR
ENGELMANN SPRUCE
LODGEPOLE PINE · LARCH

are manufactured to high standards of seasoning, grading, measurement

Today's Western Pine Tree Farming Guarantees Lumber Tomorrow

Interior designs by John and Earline Brice.

Build in sales-making décor

BEGIN WITH A BEAUTIFUL BACKGROUND

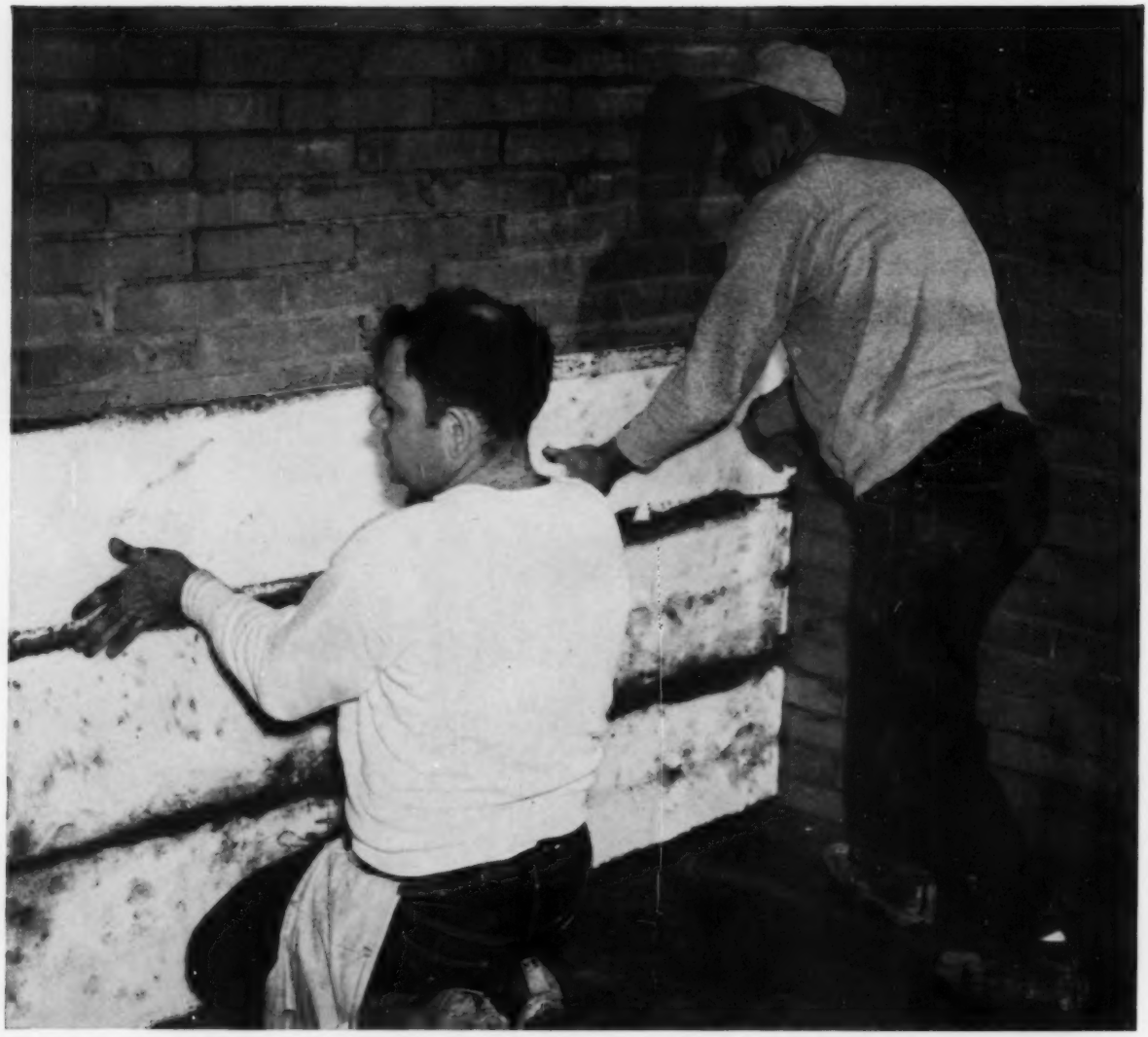
of plastic wall tile

MADE OF STYRON A DOW PLASTIC

Delightful background for a child's room . . . wall and ceiling in colorful stripes of plastic wall tile squares made of Styron®. Lustrous square tiles also face the built-in bed. From dainty bedrooms to gleaming kitchens, Styron plastic tile will give your homes distinctive new beauty that *sells* . . . beauty that is as practical as it is decorative. You have more than fifty decorator-styled Styron colors to work with . . . an exciting variety of versatile shapes . . . designs unlimited! Specify plastic wall tile made of Styron . . . the quality of tile, mastic and installation is *dealer guaranteed*. Your certified dealer can help you plan this beauty and easy-care décor that sell homes in any price range. THE DOW CHEMICAL COMPANY, Midland, Michigan, Plastics Sales Dept. PL1559Q.

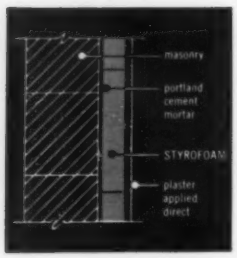
IDEA! Play up a divider wall with king-size squares of easy-to-clean Styron plastic tile.

YOU CAN DEPEND ON DOW



"RIGHT AT THE START," says W. H. Walrod, owner of Walrod Construction Company, Davenport, Iowa, "we save not only the expense of the wood for framing but the time needed to cut and fit the wood. We do away with the cost of installing insulation between studs and we side step the use of metal lath because the plaster keys directly to the Styrofoam* insulation.
"The wall is made up of just three components: exterior brick, Styrofoam and plaster. The use of Styrofoam permits the use of a special large-size brick (12" x 6" x 2⅔") which affords another saving in labor costs."

Styrofoam® insulation helps Iowa builder erect brick homes on frame-house budget



New masonry-insulation-plaster construction eliminates framing and lathing, reduces handling and installation costs, ups mortgage loan commitments

"**CUTTING AND SHAPING** Styrofoam* is almost effortless," says Mr. Walrod. "It can be scored with a knife and snapped off in any desired size."

"**STYROFOAM** bonds readily to the interior masonry surface. A uniform layer of cement mortar is applied by running the 1' x 9' boards through a coating trough."

"**EVERY BUILDER** recognizes the importance of lighter, easier to handle material. In this respect you just can't beat Styrofoam! A 10' x 12' room with an 8' ceiling requires about 20 sections of Styrofoam, which can be easily carried by one man in two trips."

FINISHED HOME, all brick veneer and fully insulated, will cost about the same as an identical house with conventional frame construction. The use of Styrofoam (Dow expanded polystyrene) and brick increases loan commitments by mortgage companies an impressive 5%. In 1956, Walrod built several homes using masonry insulation-plaster construction.

Mr. Walrod's construction costs are available to builders upon request. Write on your letterhead to The Dow Chemical Company, Midland, Michigan, Plastics Sales Department 1737N.

*STYROFOAM is a registered trademark of THE DOW CHEMICAL COMPANY

YOU CAN DEPEND ON DOW

AMERICAN MODERN at its best in architecture...in door closers

A continuing series of outstanding office buildings, churches, schools, hospitals and industrial structures using NORTON DOOR CLOSERS

Offices of Champlin Oil & Refining Co.... Fort Worth, Texas

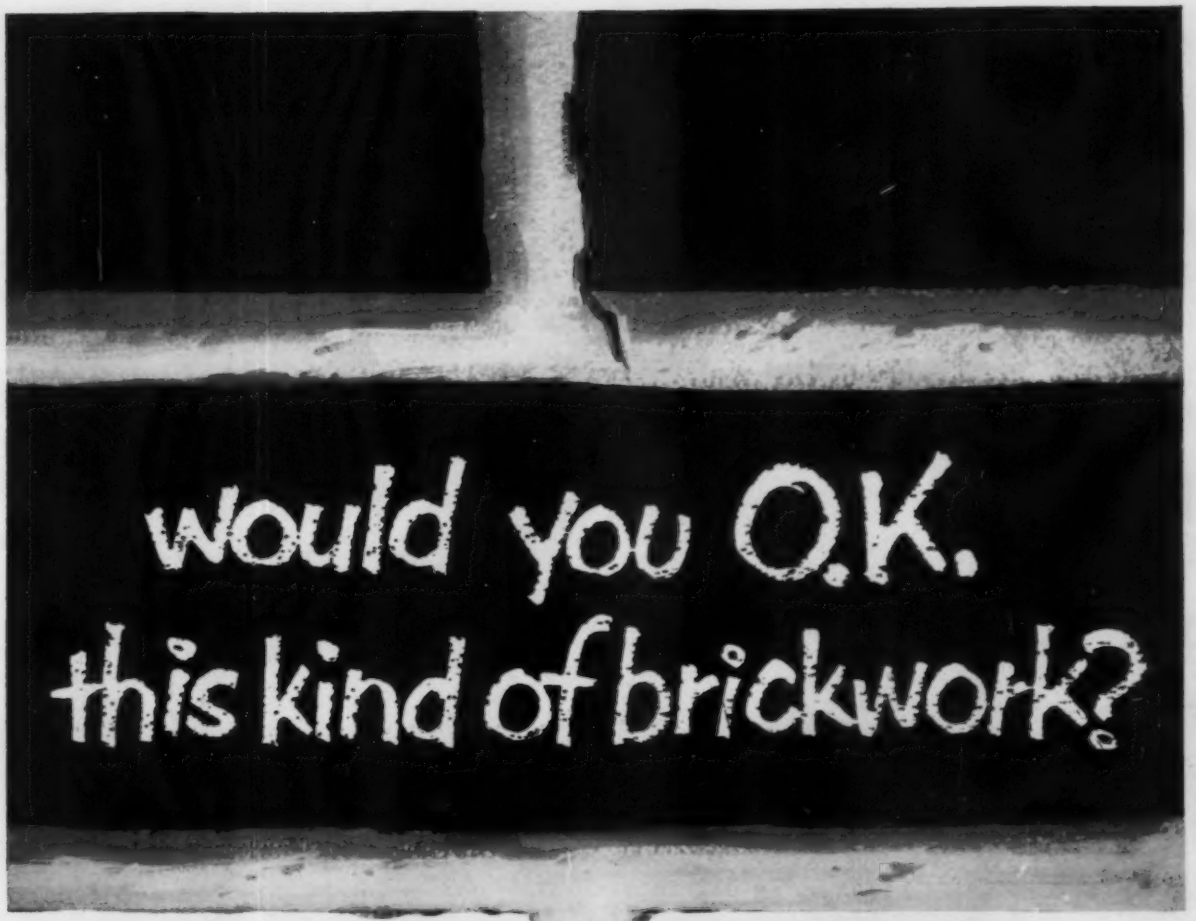
Serving as headquarters for a chain of operations that extends from the Gulf of Mexico to the Canadian Border, the structure above is considered to be one of the most modern buildings in the Southwest. Genuinely modern it is, too, not only in appearance but in every detail right down to the door closers...a Norton Inador Closer on every interior door.

The compact, powerful INADOR mechanism is fully concealed in a mortise in the top rail of each door so there is no conflict with the architect's design. Their mechanism, moreover, is of the rack and pinion structure designed and built to provide the same rugged dependability that has kept so many Norton Door Closers in continuous, trouble-free service for periods up to 30 years and more.

For complete information about these and other Norton models, consult the current NORTON catalog. Write for a copy today if you don't already have one.

A complete line of Norton Surface-type Closers is available for installations where concealment is not essential.

NORTON
DOOR CLOSERS
Dept. AR-97 • Berrien Springs, Michigan



Of course not. This masonry has cracks caused by mortar shrinkage which could result in leakage and efflorescence.

To prevent conditions like these, specify Horn Hydratite® PLUS while your plans are on the board. Hydratite PLUS reduces water absorption by bricks; allows the mortar to develop full strength, adhesion and bond to masonry. This means less mortar shrinkage . . . ample protection against leaks and efflorescence.

To make concrete, stucco and cement plaster mixes water repellent . . . specify Horn Hydratite in powder or liquid form. Both form an integral barrier against moisture penetration . . . minimize the danger of freezing and spalling.

Need to know more about these low-cost additives that give masonry structures the seal of protection? For condensed data see Sweets —for complete A.I.A. specifications write Dept. H55-915.

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Sun Chemical Corporation
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*George Kolbe, manager of Smithcraft's New York City team of Kolbe, Goren and Smith . . . part of the nationwide Smithcraft sales organization

Smithcraft fluorescent lighting units are installed in thousands of offices, factories, stores, schools and diversified interiors from coast to coast. Wherever good lighting is important, you'll find . . .

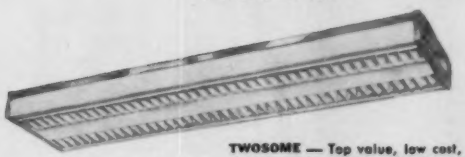
SMITHCRAFT — "AMERICA'S FINEST FLUORESCENT LIGHTING"

. . . the man from *Smithcraft*

He's the man whose experience and knowledge of lighting is backed by Smithcraft's highly diversified line of fluorescent lighting units. The "Man from Smithcraft" can suggest the new *CIVIC*, for example, for interiors requiring the very finest in "prestige lighting". Or he can turn to the brand new top value *TWOSOME* for general office, store or school lighting. Ask the man from Smithcraft to show you Smithcraft's "4 GOOD NEW IDEAS IN LIGHTING."

. . . 4 good NEW ideas in lighting

CIVIC—an architectural form . . . shallow, good-looking and in excellent taste. An extruded aluminum-framed unit.



TWOSOME — Top value, low cost, shallow and attractive. With new 45° x 45° compound shielding, or with plastic louvers, flanged polystyrene or various types of glass.

EXECUTIVE — an all-steel louvered unit; shallow with illuminated, tapered sides. Provides 30° x 45° shielding.

FREEWAY—Modern, architectural corridor-lighting . . . Totally enclosed. Clean, simple plastic shielding.

In addition to the CIVIC and the TWOSOME, Smithcraft's new developments include the EXECUTIVE and the FREEWAY. You'll find all four units useful to you in the planning of lighting for today's interiors.

Smithcraft
LIGHTING
CHELSEA 50, MASSACHUSETTS

PLEASE ATTACH TO YOUR BUSINESS LETTERHEAD and mail to *Smithcraft* LIGHTING, CHELSEA 50, MASS. AR-9

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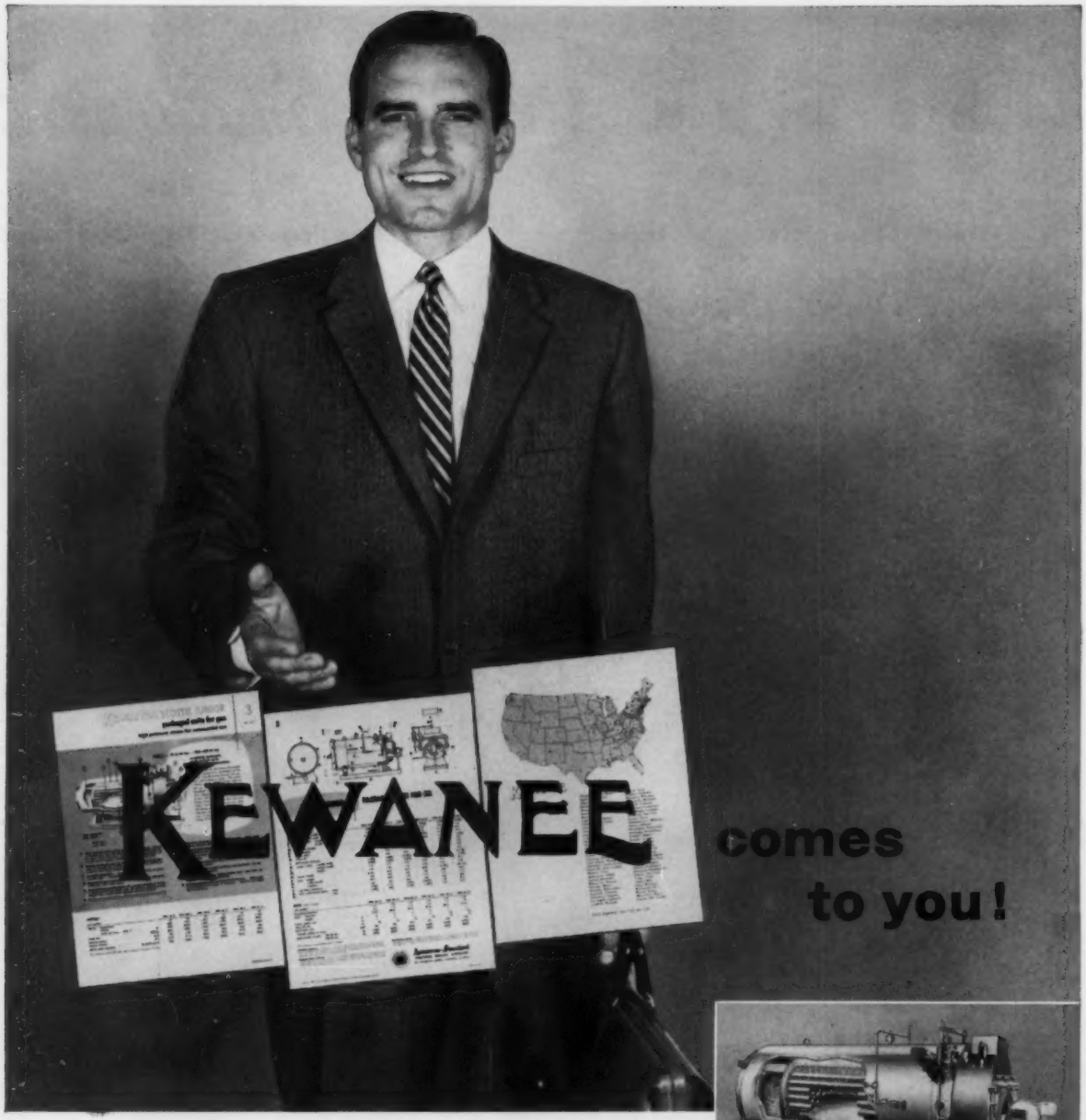
ADDRESS _____ CITY _____ STATE _____

☐ Please send me the monthly publication, "Light Side of the News", so that I can keep in touch with the latest trends in lighting.

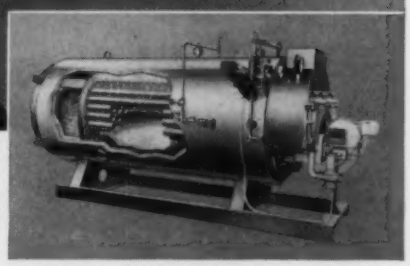
☐ Please send me folders and catalog sheets on the "4 Good New Ideas in Lighting".

☐ Please send me the complete SMITHCRAFT CATALOG, containing data on America's Finest Fluorescent Equipment.



Face-to-face with your Kewanee Man, you can explain exactly what you want to know. And he's able to give your boiler problems his personal attention, because there are *enough* Kewanee representatives to let each man do his job right! Actually, over 300 trained Kewanee Men operate from a network of 69 offices in 48 states—well able to regularly visit smaller towns as well as metropolitan centers.

Your Kewanee Man, for example, keeps up-to-date your catalog of Kewanee's complete line of fire-tube steel boilers to 651 h.p. These are the boilers with famous "cruising speed" operation . . . the boilers with an 89-year record of dependability, ease of maintenance and low operating cost. AMERICAN-STANDARD, KEWANEE BOILER DIVISION, 101 Franklin Street, Kewanee, Illinois



Ideal for laundry, cannery, dairy or other small plant, the Kewanee Scottie Junior Package is available in six sizes for oil or gas . . . 18 to 65 h.p., 125-150 lb. wp.

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Quality protects your investment—
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quality is available at no extra cost.

ARCHITECT ACHIEVED DISTINGUISHED EFFECT BY USING SPECIAL MULLIONS AND BAND COURSES IN THIS

ALUMINUM CURTAIN WALL BY CUPPLES

400 PARK AVENUE, New York City
Emery Roth & Sons, Architects
Fisher Brothers, Owners-Builders

This 20-story luxury office building is enclosed in a distinctive curtain wall, fabricated and erected by Cupples. Vertical mullions, in alumilite finish, are only 3 inches wide and project a mere 1¾ inches from the face of the building. A 12-inch horizontal aluminum band accentuates each floor level. Double-weatherstripped projected windows, also by Cupples, can be cleaned from the inside. Spandrels are structural glass.

This is another example of how Cupples' aluminum curtain walls can be adapted to fit the requirements of any structure, regardless of size. And it is further proof of Cupples' leadership in sound, economical skin construction. Cupples is also a foremost manufacturer of aluminum windows, doors, Alumi-Coustic grid systems and special ornamental products. Our catalogs are filed in Sweet's.

Cupples

PRODUCTS CORPORATION

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BETTER AIR CONDITIONING FOR EVERYBODY EVERYWHERE

Carrier

Which is the best way to air condition an existing building?

That depends on the building. Its age, size, construction and available power facilities are all important.

They affect the selection and location of individual room outlets, central air conditioners and refrigerating machines.

Carrier, in its famous Modular Weathermaster* System, offers many choices of these three basic components. Some are shown on the opposite page. Each provides unique advantages under special conditions. With these choices and many more, Carrier can recommend impartially the best air conditioning for any building—a system that's economical, efficient and can be installed with a minimum of interference to a building's routine.

For complete information, call your nearest Carrier office.

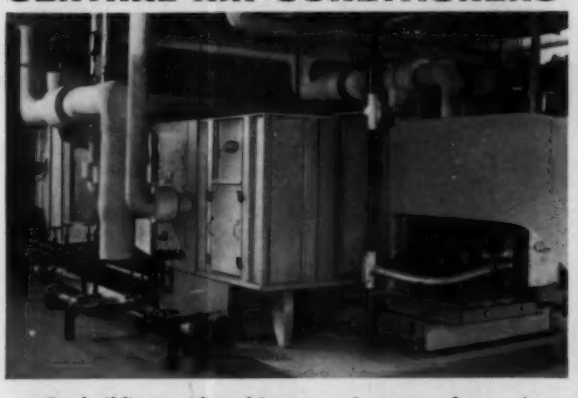
Or write Carrier Corporation, Syracuse, New York.

AIR CONDITIONING OUTLETS

For conventional windows, Carrier Modular Weathermaster Units adapt to all types of wall and column construction. Based on the "building block" principle, they can be tailored for column-to-column treatment, corner assembly and a wide variety of other arrangements.

For windows with low sills, Carrier Modular Weathermaster Units provide a "foot-high" column-to-column arrangement that is very flexible and blends well with modern architecture and furnishings. Carrier Modular Units furnish individual control of room temperature.

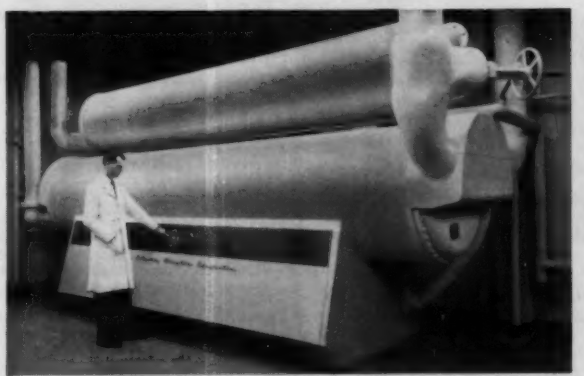
CENTRAL AIR CONDITIONERS



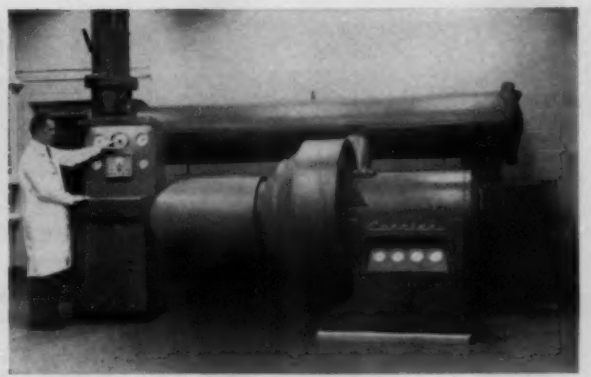
For buildings with multi-room perimeters and extensive outside exposure, this high-velocity, high-pressure, spray coil air conditioner supplies properly conditioned air for close humidity control through slim conduits to Weathermaster Units or other terminals 6500 to 21,000 cfm.

For buildings with large interior areas and relatively stable air conditioning requirements, this high-velocity, high-pressure, dry coil air conditioner is best. Conditioned air is distributed through slim conduits to ceiling or wall outlets. Capacities from 6500 to 23,000 cfm.

REFRIGERATING MACHINES



For operation with low-cost steam, Carrier's new Absorption Refrigerating Machines provide an economical source of chilled water for the air conditioning system. They cool water by using heat energy from low-pressure steam or hot liquids. Cooling capacities: 60 to 700 tons.



For operation with low-cost power, new Carrier Hermetic Centrifugal Refrigerating Machines feature a refrigerant-cooled motor, hydraulic-powered capacity vanes and electronic self-contained controls for completely automatic operation. Capacities: 90 to 1000 tons.

*Reg. U.S. Pat. Off.

NEWS ABOUT SEAPORCEL ARCHITECTURAL PORCELAIN

Panama Legislative Palace clad in Curtain Walls of

SEAPORCLAD* INSULATED-LAMINATED PANELS

The exterior facing of the Legislative Palace located in the city of Panama, Republic of Panama, utilized 600 Seaporclad insulated-laminated panels. These panels, which measure from 42″ x 23″ to 42″ x 46″ each, consist of a porcelain-enamel-on-steel exterior face in a warm green color, laminated to a one-inch-thick insulating core with an electro-galvanized steel pan-shaped back. This furnishes a curtain wall that weathers well and solves the problems of thermal and sound resistance and durability. It combines architects' wants for exterior color beauty with the practicality of minimum maintenance cost.

Panels of this type can vary from only ½ inch to three inches in thickness, replacing masonry walls from four to eight times in depth. Because they are quickly erected in place, buildings are enclosed fast, with resultant savings in time and labor.

The Legislative Palace was designed by Ernesto de la Guardia, 3rd, of Panama. General contractors were Construcciones y Proveedoras Unidas, S.A., also of Panama. The building displays a pleasing arrangement of masses and symmetry of plan, and is an example of the modern type of structures that are dotting the skyline of Panama.

Write for Brochure 92

Seaporcel

ARCHITECTURAL PORCELAIN ENAMEL

Complete Engineering and Erection Departments

A.F. of L. Metal Fabricating and Enameling Plant. Member: Porcelain Enamel Institute.

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These licensed manufacturers fabricate Seaporcel products in the countries listed below. Personnel trained in Seaporcel's U. S. plant.

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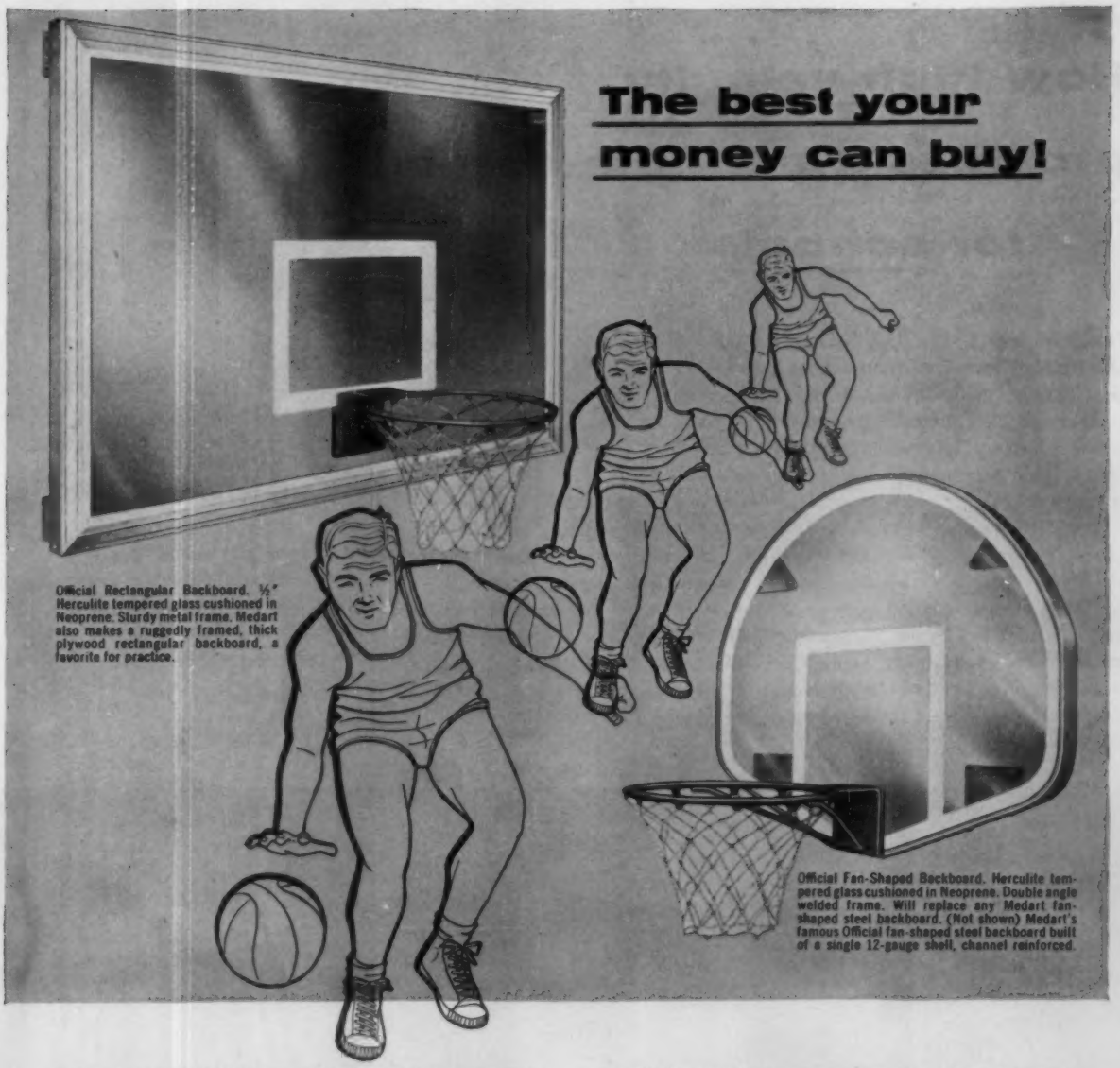
IN BRAZIL: Rheem Metalurgica S.A., Rio de Janeiro, Brazil
IN CANADA: General Steel Wares Limited, London and Toronto, Ontario, Canada
IN CHILE: Fabrica de Enlozados, S.A., "Fensa", Santiago, Chile
IN FRANCE: Societé Equipement Menager Japy, Paris, France
IN GREAT BRITAIN: Edward Curran Engineering Limited, Cardiff, Wales
IN SWITZERLAND: Metallwarenfabrik Zug, Zug, Switzerland

* Reg. U.S. Pat. Off.

SEAPORCEL METALS, INC., 28-20 Borden Avenue, Long Island City 1, N. Y.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Official Rectangular Backboard. ½" Herculite tempered glass cushioned in Neoprene. Sturdy metal frame. Medart also makes a ruggedly framed, thick plywood rectangular backboard, a favorite for practice.
Official Fan-Shaped Backboard. Herculite tempered glass cushioned in Neoprene. Double angle welded frame. Will replace any Medart fan-shaped steel backboard. (Not shown) Medart's famous Official fan-shaped steel backboard built of a single 12-gauge shell, channel reinforced.

There's as much difference in the quality, engineering, workmanship and installation among backstops as there is in any other school or gym equipment. That's why critical comparison of every basic factor invariably leads to the selection of Medart . . . probably more of them are in service than any other make.

The "PLUS-VALUE" of Medart Backstops is not only in their superior construction, but in the responsibility Medart assumes at the planning and specification stage to guarantee a true "Tailored-To-The-Job" installation—rugged, durable and rigid. Medart analyzes structural conditions, helps choose the exactly-RIGHT backstop, then follows through to assure faultless erection and completely satisfactory operation.

Before planning *any* backstop installation, consult Medart—*The Nation's Most Experienced Authority.*

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Key-operated switch on gym wall or other convenient location lowers or *raises backstops smoothly, quietly, safely, quickly.* Eliminates hand-operated winch. Can also be installed on most Medart suspended backstops already in use.

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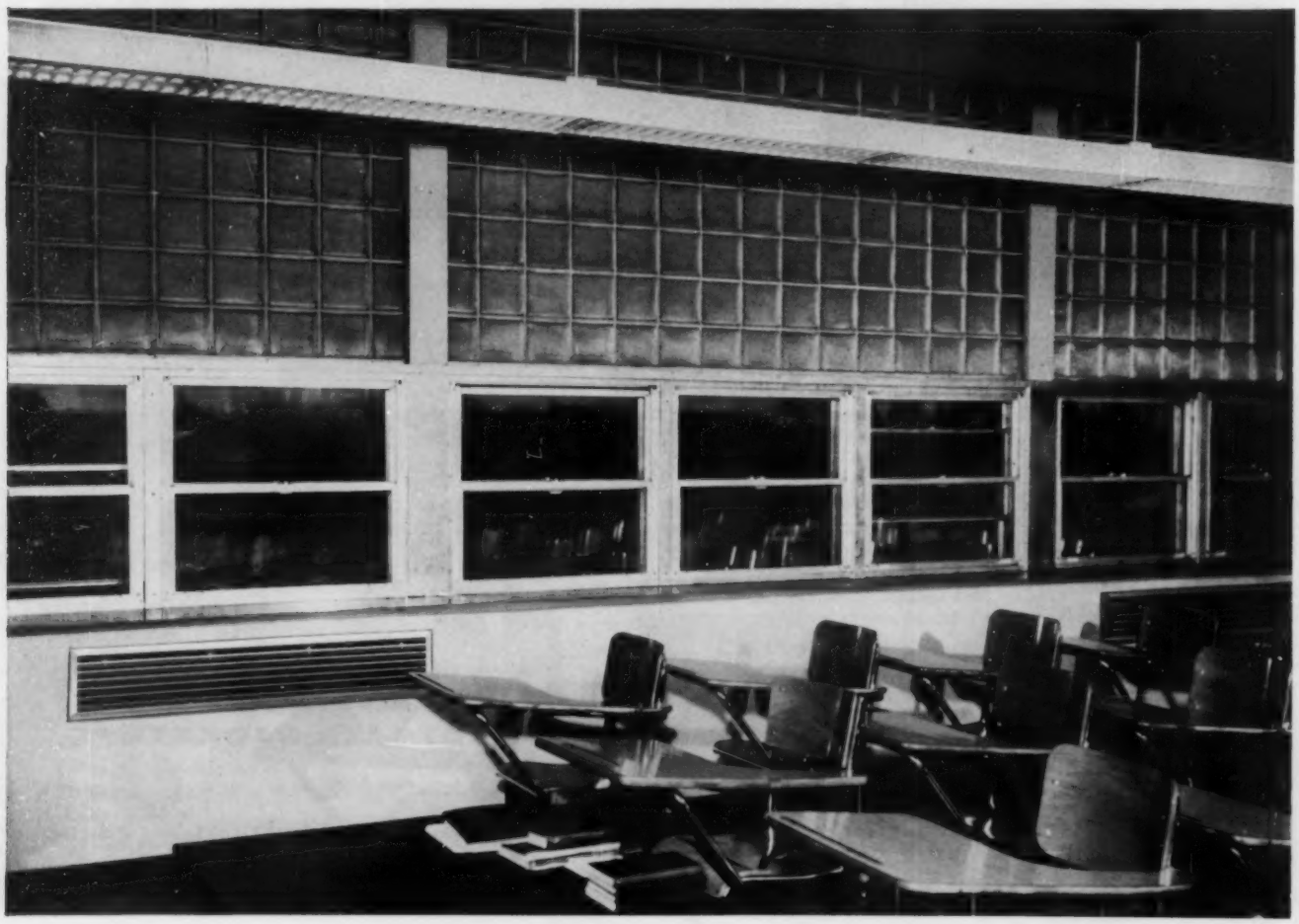
How high velocity provides maximum comfort for schools

The *Anemostat All-Air High Velocity* system of draftless air distribution offers many important advantages for heating and ventilating schools. • High velocity units, used with smaller than conventional ducts, save space and money. They substantially reduce sheet metal required, can be installed faster, at less cost. Since there are no coils in All-Air HV units, clogging and odors are eliminated. • Anemostat *All-Air HV* operate entirely with air processed in the main equipment room; there is, therefore, no need to break through the walls of the building for prime air make-up. The Anemostat *All-Air HV* units eliminate fans, filters, and electric motors in the school rooms. Units are quiet, need a minimum of maintenance from custodians. • On these pages are typical installations in which the *Anemostat All-Air High Velocity* system has been used successfully. Application data on your specific school heating, ventilating or air conditioning problem is available from Anemostat representatives or from the home office.

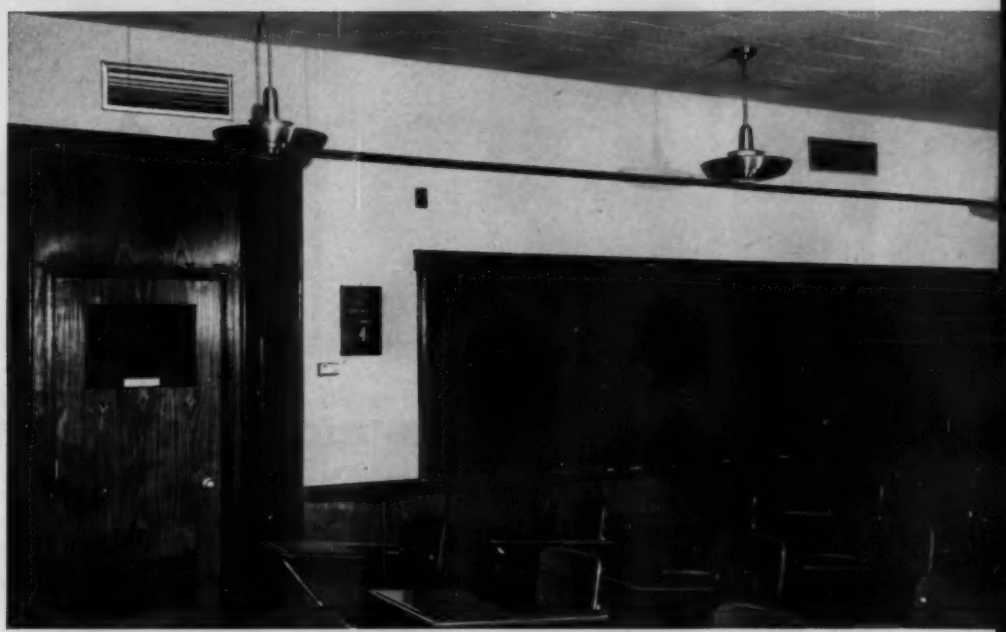
Architects—
attention please:

Anemostat round, square and straight line diffusers with high velocity units are adaptable to a wide variety of architectural designs.



In this schoolroom Anemostat Type E Square Air Diffusers are installed in the ceiling.

Here Anemostat SLW Straightline Air Diffusers on the high sidewall provide draftless comfort.



Note the Anemostat UTW Straightline Air Diffuser located under the window in this classroom.

Anemostat UTW Straightline Air Diffusers are placed under the windows in this school laboratory.

Write on your business letterhead for your copy of

New Anemostat Selection Manual 60

to Anemostat Corporation of America, 10 East 39th Street, New York 16, N. Y.

ANEMOSTAT: The Pioneer of All-Air High Velocity Systems

How to provide more school buildings for the dollar

Financing school buildings is a problem everywhere. To meet the challenge of quality at reasonable cost, more and more architects are designing safe, efficient, attractive schools of wood. Here are some of the reasons:

Wood allows design freedom

The flexibility of wood construction allows a freedom of expression difficult to achieve with other materials. To obtain a practical, yet new and fresh design, architects are specifying wood for many of today's outstanding schools.

Current and long range economy

Long-established practices with wood construction can save time, labor costs and money. These savings are important, allowing you to provide more school for a given budget, take better care of future needs.

Wood's relaxing atmosphere helps students

Students adapt quickly, learn easily in schools of the same familiar wood construction they associate with the security of their own homes.

Schools of wood are safe

One-story schools, for which wood is easily the most practical material, do away with the "stampede" danger of the multi-floored buildings of the past. Fire danger, of course, does not stem from the structural material, but from the contents of the building.

Be sure to consider wood for the homes you design. Take advantage of the versatility, beauty and economy of this ever-modern material. And . . . for strong, durable wood . . . specify West Coast Lumber . . . Douglas Fir, West Coast Hemlock, Western Red Cedar, Sitka Spruce.

Today's better schools are built with

West Coast Lumber

Douglas Fir
West Coast Hemlock
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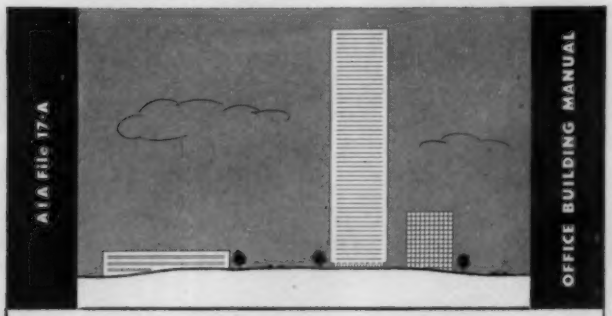
Sitka Spruce

SEND FOR FREE BOOKLETS

These two colorful booklets, fully illustrated, give more information on the advantages of wood schools. Ask for as many copies as you need. Simply drop a card to: West Coast Lumbermen's Association, 1410 S. W. Morrison Street, Portland 5, Oregon.



flexicore®

ELECTRIFIED
CELLULAR CONCRETE FLOORS

How to Electrify Precast Concrete Floors

This manual on Flexicore Electrified Floors is for architects, engineers and contractors.

It gives the architect the overall picture on the use of this system in a one-story, two-story or multiple-story office building, including savings in fireproofing, construction time and materials.

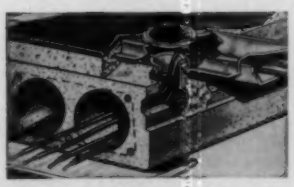
It gives the structural engineer design information on the framing for Flexicore long-span construction, plus typical structural details.

It gives the general contractor information he needs to handle a Flexicore electrified job.

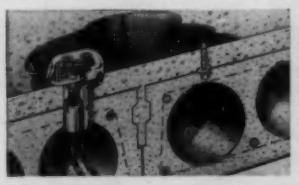
It gives the electrical engineer detailed electrical information about this system and includes typical distribution layouts.

It shows the electrical contractor the step-by-step installation of Conduflor electrical fittings with photos. These fittings are obtained by the electrical contractor from the Conduflor Corp., 3338-G Warren Road, Cleveland 11, Ohio.

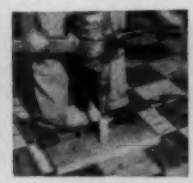
For a copy of this manual, write or phone your nearest Flexicore manufacturer or The Flexicore Co., Inc., Dayton 1, Ohio.



Wiring drops from header duct into cell at handhole junction.



Wiring then runs either way through cell to floor outlet.



To install outlet: drill hole at outlet location.

Next, install fitting in floor and fish wire.

Last, attach electric or telephone outlet box.

flexicore® ELECTRIFIED FLOORS
with Conduflor® ELECTRICAL FITTINGS

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Mid-West Flexicore
INDIANA, E. Chicago, PO 539
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MICHIGAN, Livonia, PO 2006
Price Brothers Company
MINNESOTA, St. Paul E-4
Molin Concrete Products Co.
MISSOURI, E. St. Louis, Ill.
St. Louis Flexicore Inc.
NEW JERSEY, Camden
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OHIO, Columbus 22
Arrowcrete Corporation
OHIO, Dayton 1, PO 825
Price Brothers Company
PENNSYLVANIA, Monongahela
Pittsburgh Flexicore Company
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Flexicore of Texas, Inc.
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CANADA, Supercrete Ltd.
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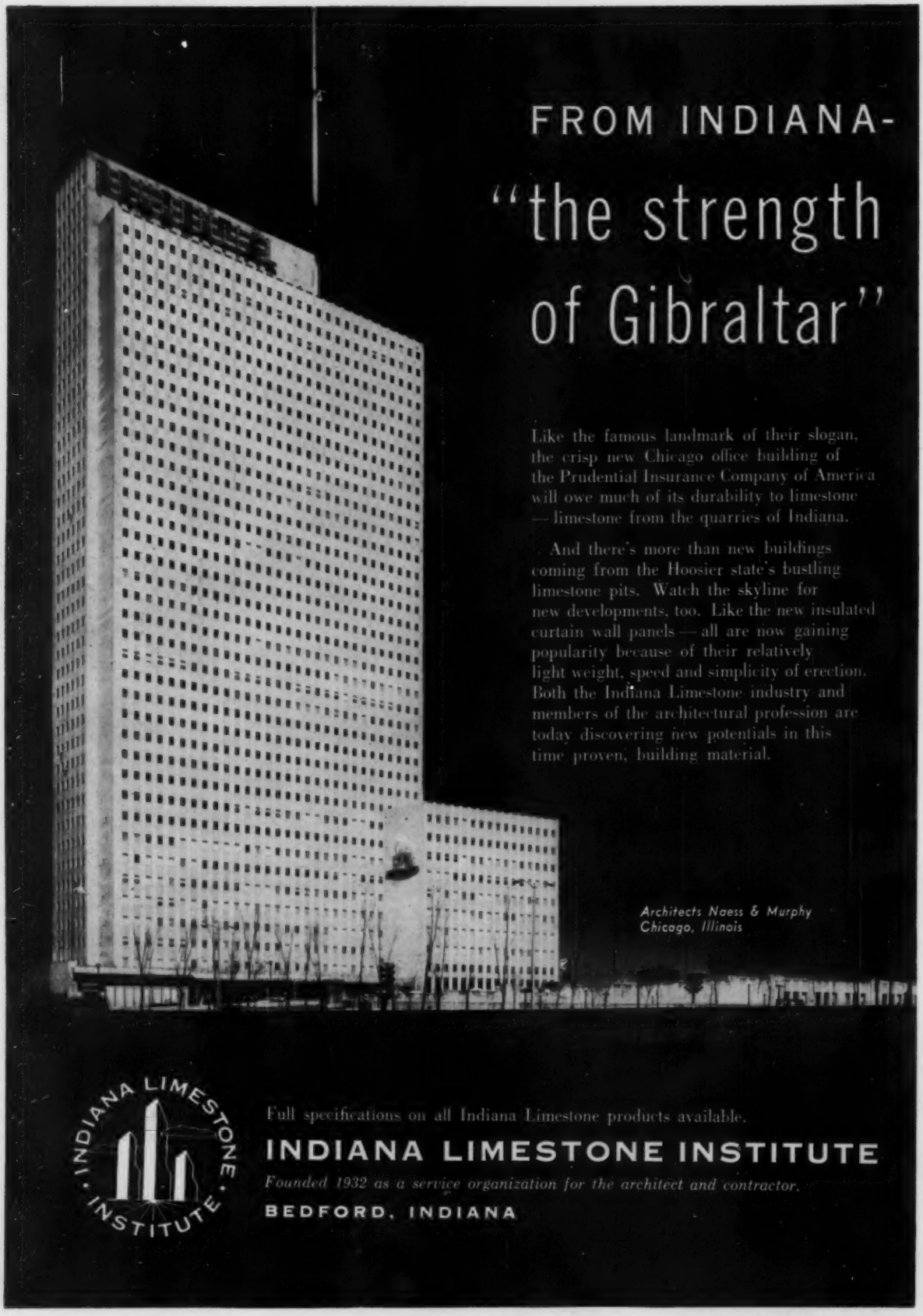
PUERTO RICO, Hato Rey
Flexicore Co. of Puerto Rico.



FROM INDIANA-

"the strength of Gibraltar"

Like the famous landmark of their slogan, the crisp new Chicago office building of the Prudential Insurance Company of America will owe much of its durability to limestone — limestone from the quarries of Indiana.

And there's more than new buildings coming from the Hoosier state's bustling limestone pits. Watch the skyline for new developments, too. Like the new insulated curtain wall panels — all are now gaining popularity because of their relatively light weight, speed and simplicity of erection. Both the Indiana Limestone industry and members of the architectural profession are today discovering new potentials in this time proven, building material.

Architects Naess & Murphy
Chicago, Illinois

INDIANA LIMESTONE INSTITUTE

Full specifications on all Indiana Limestone products available.

INDIANA LIMESTONE INSTITUTE

Founded 1932 as a service organization for the architect and contractor.

BEDFORD, INDIANA

Now! CHOOSE FROM A RAINBOW OF COLOR IN LIGHTING!

A wide choice of colors, diffusing media and shapes available in one ceiling system for complete aesthetic freedom in lighting design

View of test ceiling at our plant.

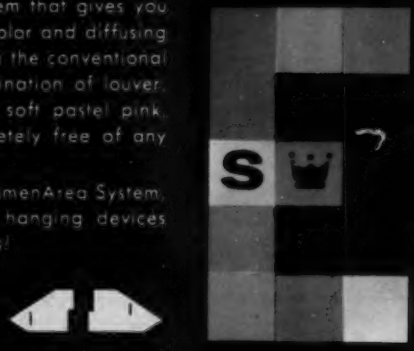
Electro Silv·A·King **LUMENAREA** ceiling system

The simplest, most versatile installation system ever developed!

Here is the world's first large area lighting system that gives you practically unlimited variety of form, as well as color and diffusing media. Now you can design lighting layouts, from the conventional to the abstract, curved or straight in any combination of louver, molded forms, glass and accent lighting . . . in soft pastel pink, blue, green and white . . . in a ceiling completely free of any visible screws, bolts or mechanical devices.

And with all that, the new Electro Silv-A-King LumenArea System incorporates Slide Adjustment and Adjusto-Lok hanging devices which adjust for spacing and depth without tools!

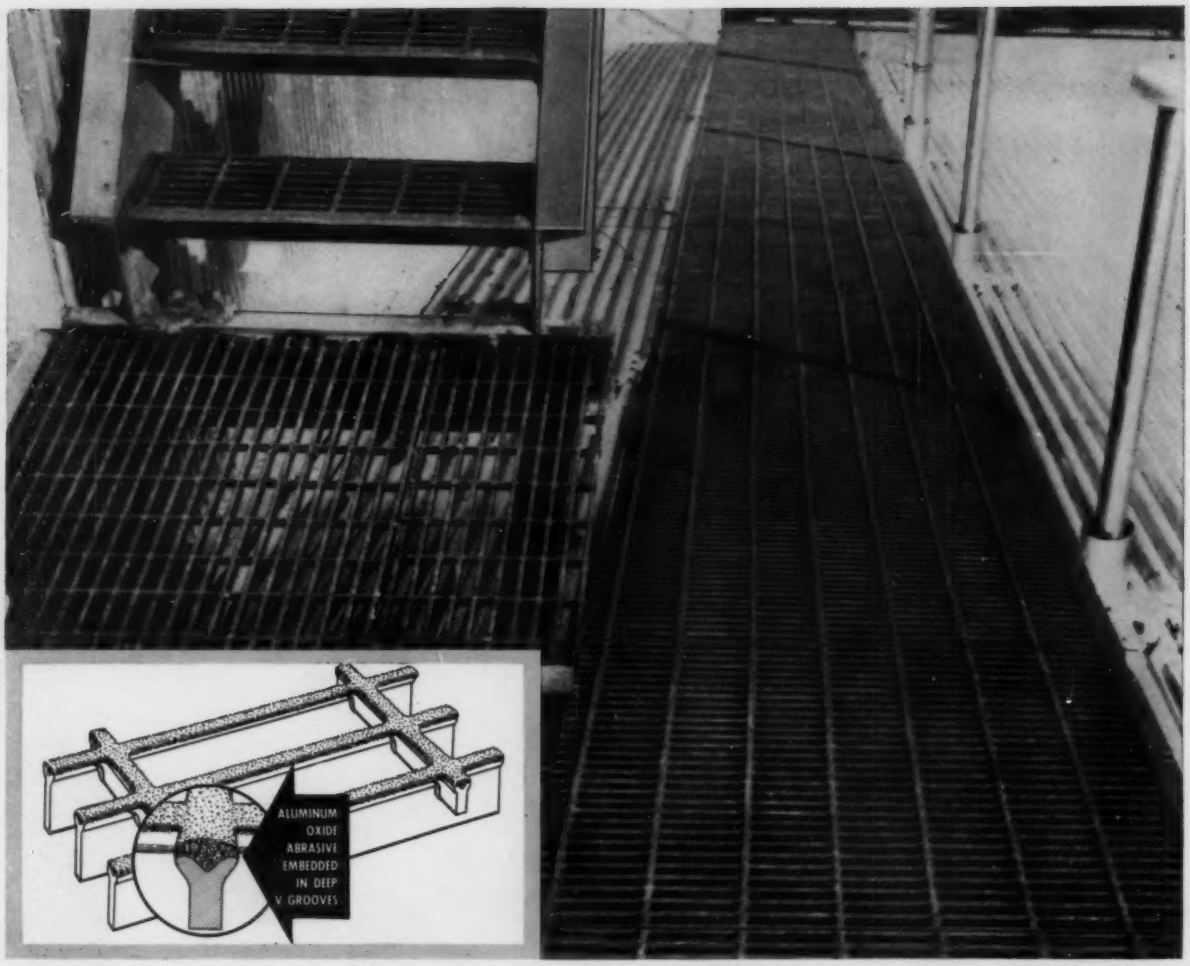
Design of our Overlap Polycube Louver (11" cube) on 2 ft. wide module is 70% light control efficiency 45° crossbaffle regardless of how long the run . . . also provides 45° x 45° shielding for optimum seeing comfort.



Dished plexiglas ceiling with perimeter of green Polycube Louvers helps give this office a distinctive appearance.

For your Free Specification and Data Bulletin, write to

Electro Silv-A-King Corporation, 1535 SO. PAULINA ST., CHICAGO 8, ILL. • SPRUCE & WATER STS., READING, PA.



RELGRIT® provides safe footing on sharply sloping roofs at AEC St. Louis Plant

Reliance Relgrit gratings and treads are providing safe access to stacks, filters and other equipment across the 18° sloping roof of the AEC Feed Material Plant near St. Louis. The abrasive surface of Relgrit was picked as a truly non-skid surface for ramps, stairways and walks leading to equipment which had to be serviced frequently.

The top surfaces of the bearing bars have ⅛" deep V-grooves in which is embedded aluminum oxide abrasive grains in a hard resin. The material is not affected by water, oil, gasoline, greases, or the most commonly used acids, alkalis and other chemicals, which gives it a long service life under the most severe conditions. If you have operations in which the floors become oily, greasy, wet, or slick from any other cause, Relgrit can provide safe footing at very low cost. Write for complete information and samples.

*you can't slip on Relgrit**

*Patent applied for

Reliance Steel Products Company

P. O. Box 510-F, McKeesport (Pittsburgh District), Pa.

Relgrit Abrasive Gratings and Treads • Lightweight Bridge Flooring
Steel, Stainless and Aluminum Grating • Steel Mill Equipment

An integrated family living area by **MUTSCHLER**

—courtesy Family Circle Magazine

Three vital home areas—kitchen, dining and laundry—are smoothly integrated in this beautiful new kitchen by Mutschler. Though blended, each area does not interfere with work patterns of another. Such a kitchen is no happenstance. It's the result of careful planning, backed by years of specialized experience. That's why our kitchen planning services are valued by architect and builder alike . . . why we think you'll be interested, too. Send coupon to learn how the services of a Mutschler kitchen specialist may be made available to you . . . at no extra expense.

Mutschler KITCHENS

first name in the kitchen since 1893

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Please send complete information on your kitchens and planning services.

name

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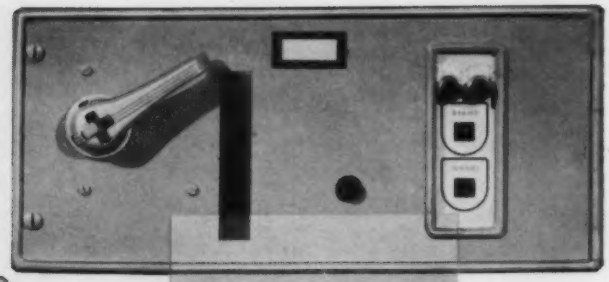
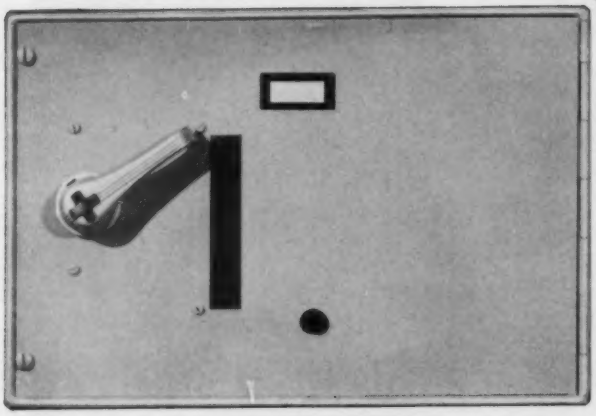
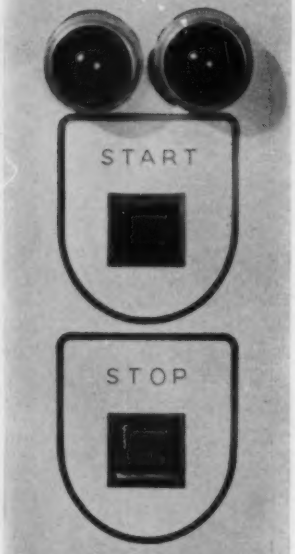






Announcing: NEW Westinghouse 14- and 9⅓-inch modular units for additional versatility

Complete Interchangeability Plus New Safety Features Mark Industry's Newest Control Center

The clean, efficient design of this new unit is the answer to today's—and tomorrow's—needs for complete flexibility in control center installations. Not only do you get the additional versatility of the new 9⅓-inch units, but also complete interchangeability with the old.

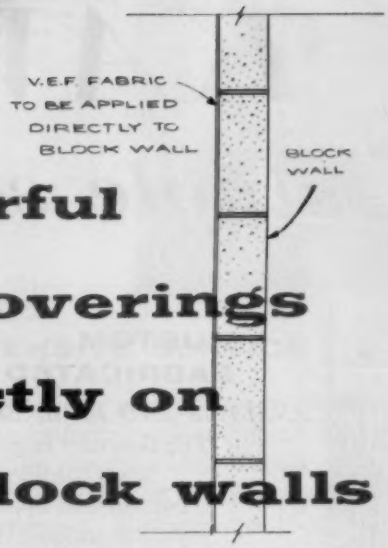
New safety features protect both personnel and equipment fully. Just as important as the dividends in installation, maintenance and safety are the moneysaving advantages of dealing with one source with complete responsibility for all your control center needs.

To learn more about the newest control center in the industry, call your Westinghouse sales engineer. Or, write Westinghouse Electric Corporation, 3 Gateway Center, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-22043-A

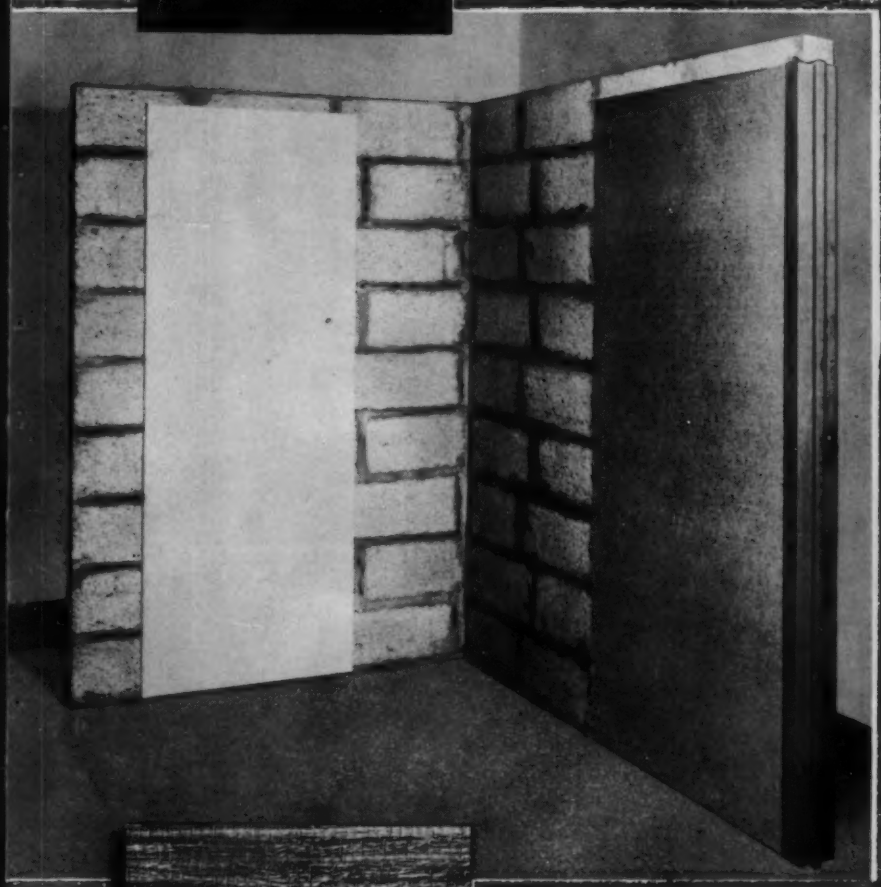
YOU CAN BE SURE...IF IT'S

Westinghouse

another VICRTEX IDEA



Yes, those wonderful VICRTEX V.E.F.* wallcoverings can be hung directly on bare structural block walls



You save construction time and costs

You get beautiful, texturally interesting, colorfully "finished" walls that last practically forever

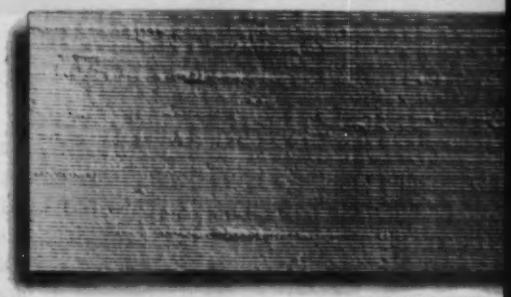
You are assured of low maintenance costs

You have wide decorative latitude

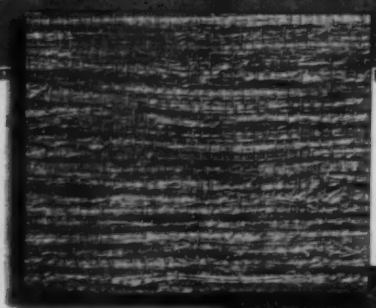
This amazing fabric-backed electronically fused vinyl wallcovering can be applied directly to any kind of structural block wall—cinder, cement, slag, etc. Tri-dimensional, strikingly effective in design, Vicrtex VEF is almost indestructible . . . won't fade, scuff, crack or peel . . . wipes clean with a damp cloth . . . provides an attractive, luxurious "finish".

More than 30 patterns . . . 30 colors and color combinations to choose from.

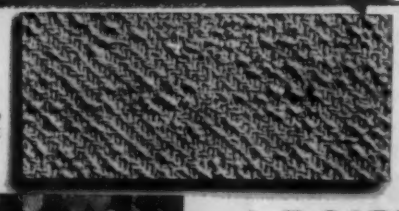
*vinyl electronically fused



IMPERIAL SILK



GRASS CLOTH



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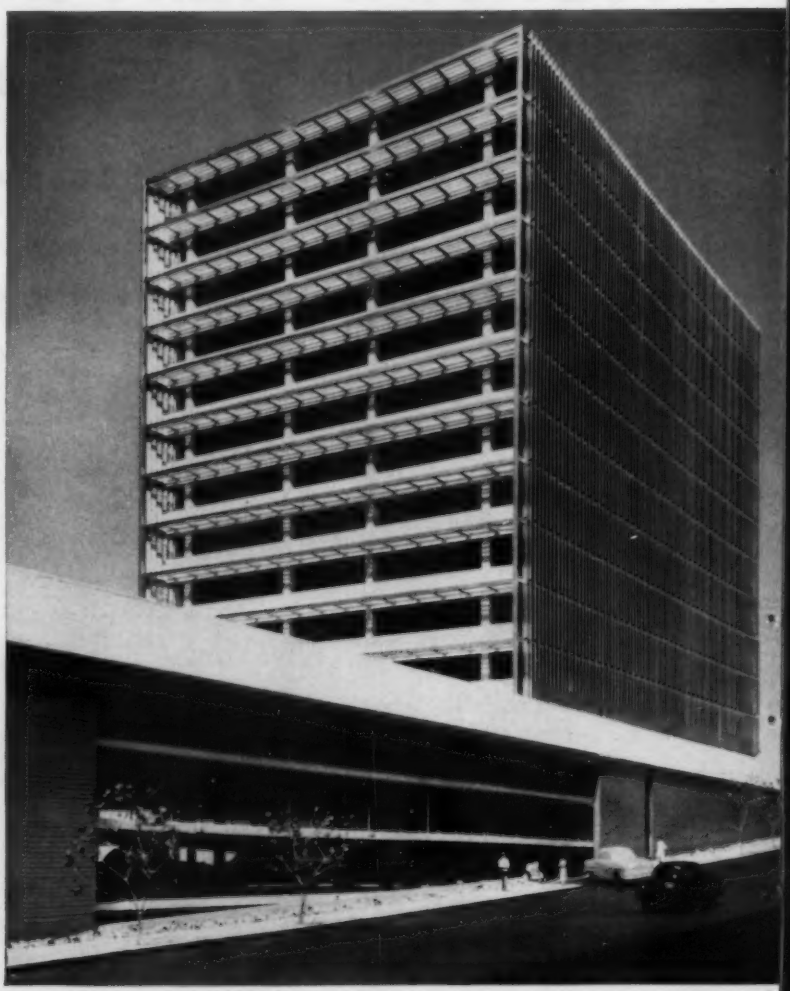
A single source for a complete

CUSTOM FABRICATED

ANALYSIS AND ENGINEERING—The Kawneer engineering team considers every curtain wall application as unique. Each is subjected to a searching analysis. Such points as (1) the curtain wall's effect on load bearing elements, (2) adequate accomodation for wall movement due to wind load and temperature change, (3) weathering features and (4) integration of all components within the wall system are the subjects of careful study. The result of this careful analysis is a curtain wall design that provides the highest standards of performance while retaining the most expressive appearance of the architect's design.

Imperial Oil Company, Sarnia, Ontario, Canada
Arch.: John B. Parkin Assocs., Sarnia



Tishman Building, Los Angeles, Calif. Arch.: Victor Gruen Assocs. Arch. & Engr., A.I.A.

FABRICATION—Kawneer modern fabricating facilities and flexibility of production assure you of the most effective execution of your metal wall requirements. Whatever finish or material, whatever performance demands you make, Kawneer will provide the answer in its metal wall system.

INSTALLATION—Kawneer takes complete responsibility for engineering, fabrication and installation . . . assurance that your curtain wall will perform to your complete satisfaction.

Guarantee Mutual, Omaha, Nebraska. Arch.: Leo A. Daly, Arch. & Engr. Contr.: Peter Kiewit Sons Co.

Mutual Benefit Life Insurance Co., Newark, N. J.
Arch.: Eggers & Higgins, F.A.I.A., Newark
Gen. Contr.: Geo. A. Fuller, New York City

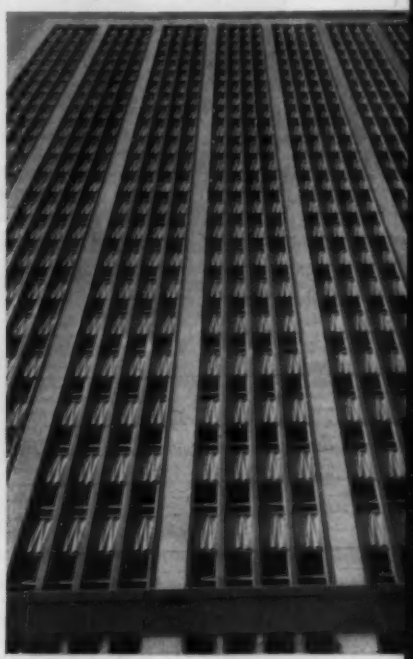
curtain wall system

BROAD PRODUCT RANGE—COMPREHENSIVE SERVICE

Kawneer as a single source for curtain wall means high quality units are available in aluminum, stainless steel or porcelain finish. You have a selection of roll formed, brake formed or extruded shapes. Specially designed operating sash with neoprene or vinyl weather seal or fixed glazing can be used. Insulated sandwich panels, custom-engineered sun control devices can be adapted to any job. The finest aluminum entrance units and aluminum or vinyl covered flush doors are also available.

Kawneer is your best single source for curtain wall components. Kawneer metal wall engineers will assist you to design, detail and specify curtain walls that will maintain your high standards of design and construction.

Central Illinois Light Company, Peoria, Illinois. Gregg & Briggs, Architect and Engineer. General Contractor: V. Jobst & Son



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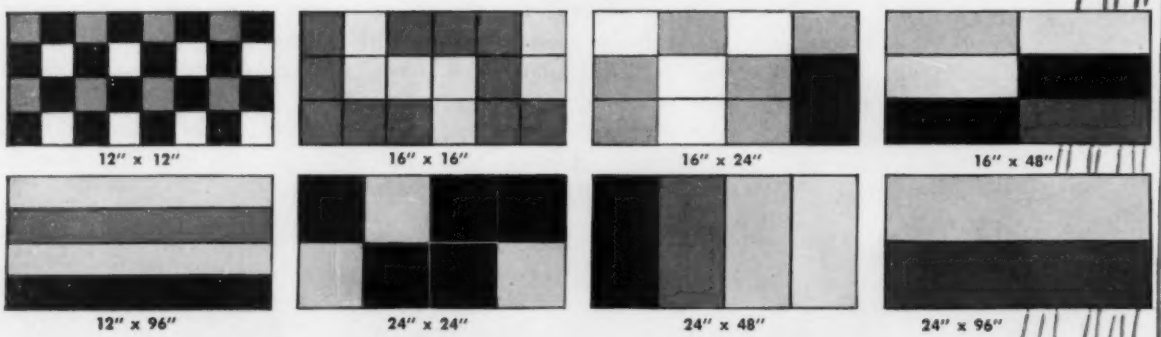
ARCHITECTURAL PRODUCTS DIVISION

since 1906

ANOTHER HOMASOTE "**FIRST**" IN DRY-WALL CONSTRUCTION

NOW ON 4′ x 8′ PANELS

WALL and CEILING TILES



in 33 different designs

A totally *new dimension* in wall and ceiling treatments — offering an endless variety of design at great construction economies

PANL-TILE is the first material of its kind for dry-wall tiling of *both* walls and ceilings. These sturdy 4′ x 8′ panels are grooved every 12″ or every 16″—and on special order may be grooved in any multiple of 8″ or 12″. Thus the architect or builder has tiles in the shape of squares — in several sizes; in the shape of rectangles — in several proportions and sizes, *horizontal or vertical*. In addition, the tiles take any paint or stain beautifully in a myriad of color harmonies — may be used with moldings for raised paneling effects.

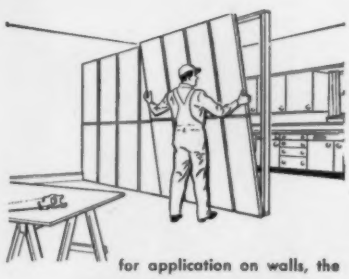
The unique ⅜″ wide groove is far more striking than simple scored lines — and can be painted in blending or contrasting colors to original color schemes.

The 4′ x 8′ panels make application of Panl-Tile exceedingly fast. Joints are automatically taken care of with the 3-stage, groove-lap joints on all sides and edges. True-line joining is assured.

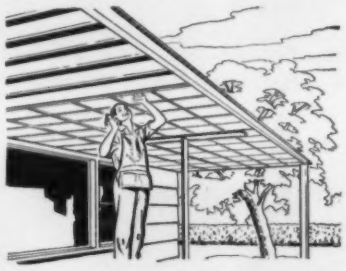
Because Homasote Panl-Tile is weatherproof, it is used outdoors as well as indoors. The standard linen surface exhibits important sound-deadening qualities; and for greater acoustical effect, *Panl-Tile is also available with funnel perforations.* The tile may be secured unpainted, or painted white, one coat, one side.

* * *

Write now for complete specifications and application data. Thirty-three different wall or ceiling designs are suggested in the new Panl-Tile folder. Kindly address your inquiry to Department J-12.



for application on walls, the 4′ x 8′ panel means real speed and ease of handling (also in 2′ x 8′, 2′ x 4′, or 1′ x 8′ panels).



for ceiling and soffit erection, a "T" supports the panel during nailing.

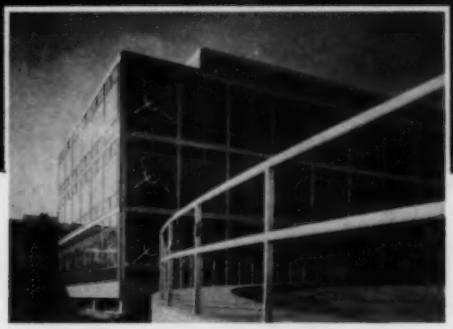
HOMASOTE COMPANY, TRENTON 3, NEW JERSEY

IN CANADA: TORONTO, ONT.—P.O. Box 35, Station K • MONTREAL, P.Q.—P.O. Box 20, Station N

Designers of curtain wall structures depend on modern elastomeric sealing compounds based on* THIOKOL *liquid polymers to prevent leakage.

Sealants containing THIOKOL liquid polymers resist deterioration under extreme water and weathering conditions. They cling tenaciously to a wide variety of materials—wood, steel, stone, glass and plastics —and remain almost impervious to the effects of sunlight, vibration, ozone, oxygen and smog.

For more information, see Sweet's 1957 Catalog or write: Thiokol Chemical Corp., 780 North Clinton Ave., Trenton 7, N. J. In Canada: Naugatuck Chemicals Division, Dominion Rubber Co., Elmira, Ontario.



3M's dramatic new WEATHERBAN brand curtain wall sealer based on THIOKOL liquid polymers was used for the Connecticut General Life Insurance Company building after exhaustive "hurricane tests" proved its resistance to water and stress. A simulated 12-inch-per-hour rainfall driven by 125 mph gales beat against huge 8′ x 11′ glass panes sealed with WEATHERBAN sealer. The seal adhered perfectly without leakage and absorbed the strain and shock waves caused in the heavy glass by the buffeting winds.

Thiokol®
CHEMICAL CORPORATION

®Registered Trademark of the Thiokol Chemical Corp. for its liquid polymers, rocket propellants, plasticizers and other chemical products.

Existing Road Improved. The Ninety-Sixth Street overpass on the F. D. Roosevelt Drive along the East River, New York, is typical of much new construction designed to speed traffic flow. Monel alloy was specified for gutters because a long-wearing, low-maintenance metal was needed in the structure built for the city by the Triborough Bridge and Tunnel Authority.

How to keep an *Overhead* problem *Under* control

This 4-block-long highway overpass is built with four expansion joints and two dams.

Under these six spots are six gutters.

They don't have to be painted. They seldom have to be looked at. And they may never need any maintenance work done on them!

What kind of gutters are these? They are permanent gutters – made of Monel* nickel-copper alloy roofing sheet.

Because of its nickel-copper composition, Monel alloy possesses a unique combination of properties—properties not found in other non-ferrous roofing metals.

Monel alloy, for example, is stronger and tougher than many structural steels. It is tough and hard. It resists stresses, strains and wear. Its low coefficient of expansion reduces the possibility of fatigue failure.

In the location pictured above, the effects of dirt, soot, fumes and dampness must also be considered. But they don't bother Monel alloy. And what about the *salt* used on the roadway to reduce ice hazards during winter storms? It doesn't hurt these corrosion resisting gutters in the least.

Monel alloy is equally well suited for many jobs in addition to gutters. It is adaptable to almost all types of public works and commercial buildings. Specify it for complete roofs—flat, standing or batten seam. And for flashings, skylight frames, reglets, cornices, downspouts, louvers and ventilators.

Remember – you do your clients a *lasting* service every time you specify *lasting* Monel alloy. *Registered trademark

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York 5, N. Y.

Installing Monel Gutter under expansion bands at the north abutment of the overpass. Monel alloy is easy to bend, cut and weld. Although relatively thin gauge sheet is used here (.062 in.), Monel gutters have ample strength to withstand deformation during installation . . . and abrasion and flexure after installation. ***Consulting engineers: Brown & Blauvelt, New York.***

INCO TRADE MARK **Nickel Alloys**

Monel Roofing . . . *"for the life of the building"*

Daylight Research House, Ann Arbor, Michigan. Architect: Harris Armstrong, A. I. A., Kirkwood, Missouri. Decorator: Marian Quinlan, Chicago, Illinois

Pella®

SEE HOW THESE NATURAL WOOD PELLA FOLDING DOORS harmonize with the walls, floor, ceiling, and furnishings of this room. And PELLA DOORS contribute to over-all excellence of room design, too—you can close for privacy, open to create attractive spaciousness. Handsome veneers of birch, pine, oak and Philippine Mahogany are available. Easy-to-install, doors are factory assembled, and come complete with all hardware.

WOOD FOLDING DOORS

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Please send literature featuring PELLA WOOD FOLDING DOORS.

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CITY ZONE STATE

ATTENTION MR. TEL. NO.

in this contemporary interior...

Neutrality of walls, doors, floors and ceiling is preserved by unobtrusive uniform hanging for all doors in the extensive executive suite of the Natural Gas Pipeline Company of America. — Naess & Murphy, architects and engineers, Chicago

which doors have RIXSON closers?

Entrance door, left, has Rixson no. 20 concealed floor type closer. Communicating office door, right, is equipped with a Rixson Uni-check concealed floor type closer. Inactive wardrobe doors, center, have no closers; but are hung on Rixson no. 117 offset pivot sets. All doors have identical hanging style, achieving a pleasing simplicity.

No exposed mechanisms or unsightly arms mar the appearance of these beautiful modern doorways, even when doors are open. Extra-length spindles are provided to clear thick rug installations.

Matched hanging styles can also be achieved with Rixson center hung installations.

write for condensed catalog 18e

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canadian plant: 43 racine road • rexdale, ontario

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FOCAL POINT: PELLA WOOD CASEMENT WINDOWS, this time with horizontal and vertical muntins. Wood windows, wood paneling...a naturally beautiful combination. Besides, these are the windows with built-in ROLSCREENS, that roll up and down like window shades. And, for year-round weather protection, PELLA CASEMENTS can be furnished with PELLA's own dual glazing "storm window" panels.

WOOD CASEMENT WINDOWS

ROLSCREEN COMPANY, Dept. I-98
Pella, Iowa

Please send helpful 20-page book, *"Library of Window Ideas."*

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Many Architects Prefer Weyerhaeuser 4-Square

Kiln-dried Lumber

Architects recognize kiln-dried lumber as an important "hidden value" in sound construction. They know that the true value of a home or commercial structure is measured by the qualities of the basic materials employed.

All Weyerhaeuser 4-Square trademarked lumber is kiln-dried. That is why many architects specify Weyerhaeuser 4-Square. They know kiln-dried lumber contributes toward sturdy structural framing, protects against warping or shrinking. Some of the uses for these quality products are shown in the illustration above:

(1) Kiln-dried Framing and Rafters; (2) Kiln-dried Joists; (3) Kiln-dried Sheathing; (4) Kiln-dried Sidings and Finish items.

There are many other extra qualities in Weyerhaeuser 4-Square Lumber. It is uniformly graded and precision manufactured. It is available in a broad choice of species, grades, and items. Every item is scientifically "seasoned" for greater stability and nail-holding properties.

When architects specify 4-Square Lumber, they add value to their professional services by providing for greater stability and beauty in their finished projects.

WEST COAST HEMLOCK—one of the variety of species—is often called the "Ability Wood" because it is so versatile, serving dependably for framing and sheathing as well as for flooring, siding, molding, and other finish uses.

WEYERHAEUSER 4-SQUARE

WEYERHAEUSER SALES COMPANY • ST. PAUL 1, MINNESOTA

Gerald B. Cox, Architect. H. George Schloemer, Builder

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HANDSOME IN EVERYTHING BUT PRICE, PELLA MULTI-PURPOSE WINDOWS can create a striking focal point for both interior and exterior elevations. These windows feature all-aluminum and stainless steel hardware. Self-storing inside "storms" when specified. Wood or aluminum frame screens. Exclusive GLIDE-lock underscreen operator at no extra cost. 15 fixed and vented window sizes are all compatibly proportioned.

WOOD MULTI-PURPOSE WINDOWS

ROLSCREEN COMPANY
Dept. I-99, Pella, Iowa

Please send literature on PELLA MULTI-PURPOSE WINDOWS.

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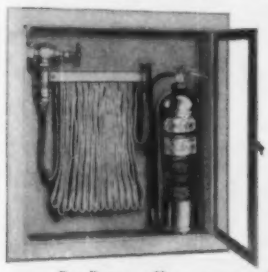
faster, easier installation...

because the beauty is still in the carton!

Fyr-Fyter two-piece fire hose and extinguisher cabinets

One man can quickly, easily and accurately install these modern, attractive, recessed cabinets featuring two-piece construction—the cabinet box or tub and separate door and trim assembly. After cabinet box or tub is anchored, and inside equipment fitted, the removable door-and-trim assembly can be secured quickly. There's no chance of damage from bumps, scratches or broken glass, because door-and-trim stay factory-fresh in carton until needed!



Fyr-Fyter's two-piece construction allows more room to work . . . makes plumbing connections more accessible . . . means less weight and bulk to handle. Angle valve, hose rack, fire hose and extinguisher are properly positioned faster. And final decorative color finishes applied at the factory are now practical.

Fyr-Fyter offers a complete line of architecturally designed hose and extinguisher cabinets, including conventional one-piece welded units, for schools, hospitals, office buildings and institutions. See Fyr-Fyter's 16-page insert in Sweets Catalog, or write today for complete descriptive literature on Interior Fire Fighting Equipment!

Fyr-Fyter sales and service representatives can furnish you TODAY with detailed Specification Sheets indicating exact "roughing-in" dimensions, etc.

Fyr-Fyter

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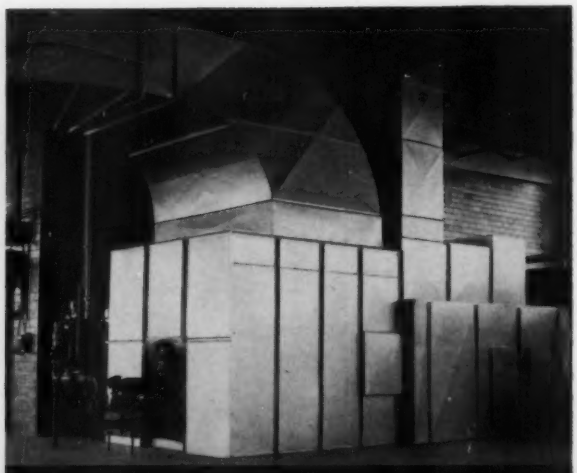

Jackson & Church furnaces

solve difficult heating problems of new Crown Cork and Seal plant —

INSTALLATION DATA

PLACE:
New lithograph plant of Crown Cork & Seal Company's Can Division, Philadelphia, operating five of the latest litho presses and five coaters and ovens

REQUIREMENTS:
Dependable heating designed to supply large volume of fresh outside air replacing oxygen consumed by lithograph equipment. Summer air conditioning to utilize same ducts and fans

HEATING UNITS SPECIFIED:
Three JACKSON & CHURCH GA-4750 units, having a total air delivery of 120,000 C.F.M. and 14,250,000 Btu input

MANUFACTURER:
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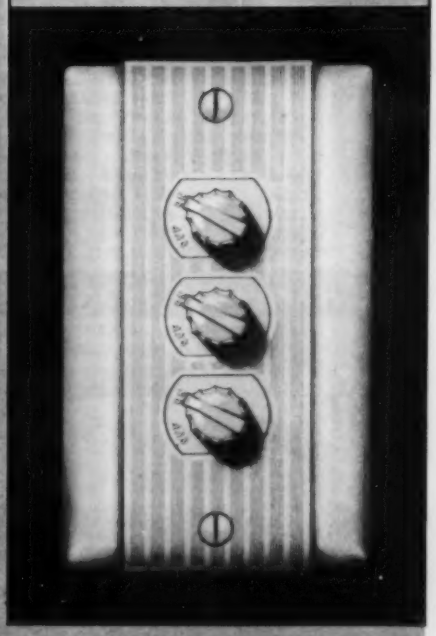
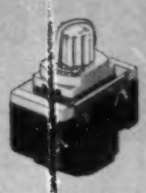


No. 1591-I
STRAP TYPE
ROTO-GLO
15 AMPERES



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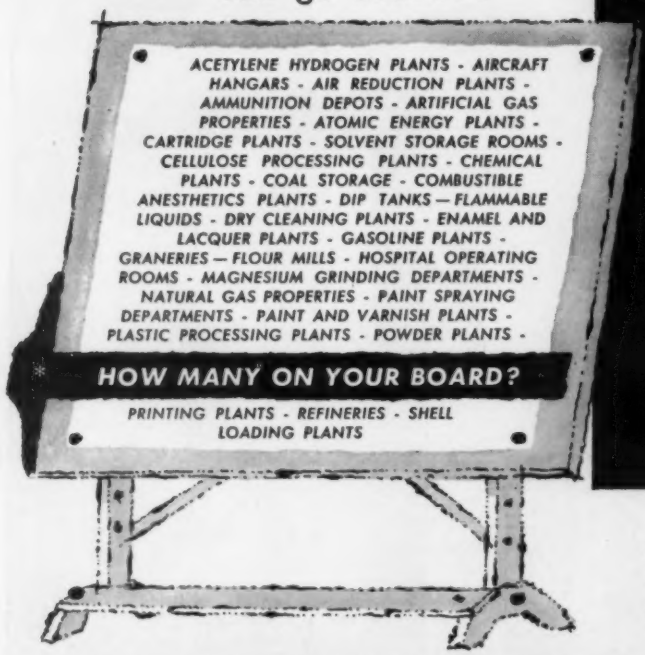
ACETYLENE HYDROGEN PLANTS - AIRCRAFT HANGARS - AIR REDUCTION PLANTS - AMMUNITION DEPOTS - ARTIFICIAL GAS PROPERTIES - ATOMIC ENERGY PLANTS - CARTRIDGE PLANTS - SOLVENT STORAGE ROOMS - CELLULOSE PROCESSING PLANTS - CHEMICAL PLANTS - COAL STORAGE - COMBUSTIBLE ANESTHETICS PLANTS - DIP TANKS — FLAMMABLE LIQUIDS - DRY CLEANING PLANTS - ENAMEL AND LACQUER PLANTS - GASOLINE PLANTS - GRANERIES — FLOUR MILLS - HOSPITAL OPERATING ROOMS - MAGNESIUM GRINDING DEPARTMENTS - NATURAL GAS PROPERTIES - PAINT SPRAYING DEPARTMENTS - PAINT AND VARNISH PLANTS - PLASTIC PROCESSING PLANTS - POWDER PLANTS -
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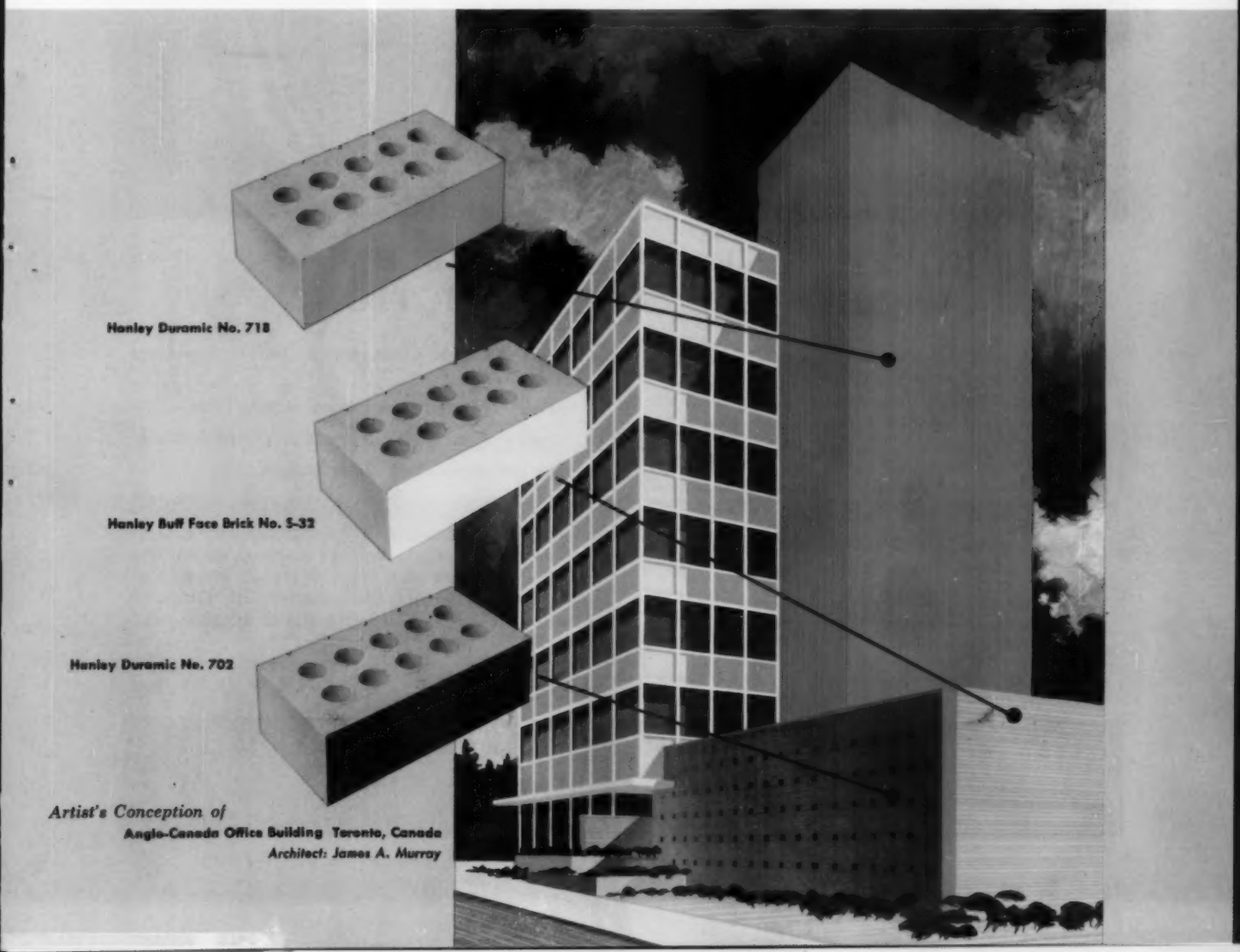
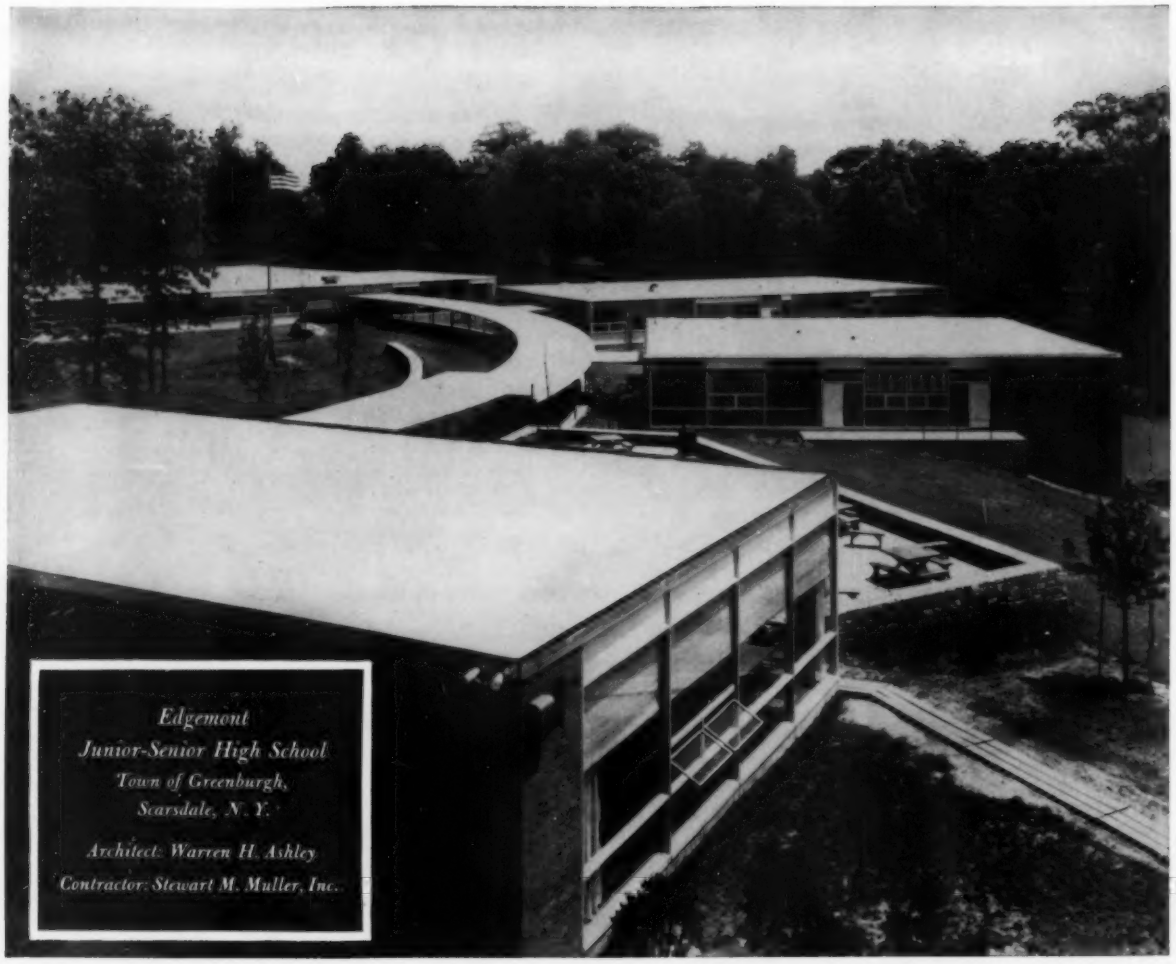


Artist's Conception of
Anglo-Canada Office Building Toronto, Canada
Architect: James A. Murray



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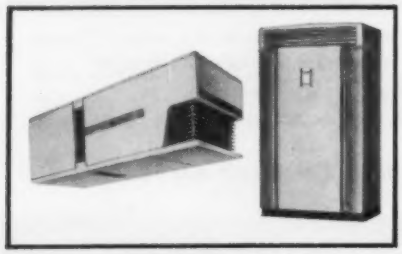
H. Daroff & Sons, Phila., first plant of its type to be fully air conditioned—thanks to General Electric Zone-by-Zone method.



CEILING-MOUNTED UNITS (left). Use no floor space—air-cooled and water-cooled.

FLOOR-MOUNTED UNITS (right). May be stationed in space or away from area served.

The H. Daroff and Sons plant is a typical example of how General Electric Zone-by-Zone Air Conditioning fully meets requirements for any type of factory or office building—even overcomes seemingly insurmountable problems. This system is also a sure way to solve budgeting problems. It is easy to install—no costly interruptions—no major alterations—no heavy initial outlay. Its operation is economical, and it minimizes the problem of space.

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On Murray State College's new dormitory . . .

A RUBEROID BUILT-UP ROOF

Was engineered to fit the job

Ralph Woods Hall, the new dormitory for women at Murray State College, has a unique design feature. Three dormitories are joined into one by connecting three wings with a large circular lobby.

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AN EDUCATIONAL OASIS

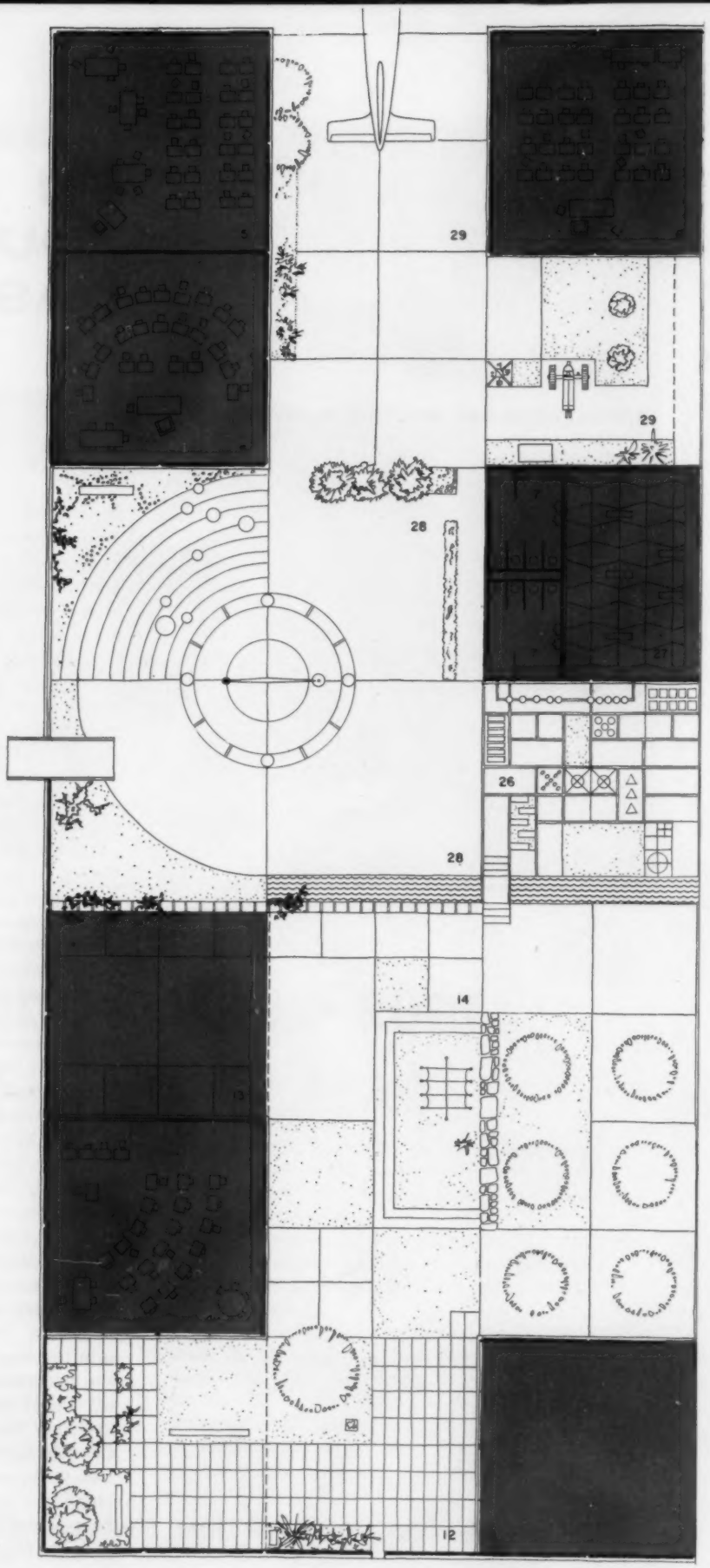
ARCHITECTURAL RECORD SEPTEMBER 1957

In this elementary school the individual classroom is an incident in a garden walled off from the community. While the educational symbols in this kind of segregation may be debatable, the architectural potentials appear uniformly rewarding. The *contained* courtyard is familiar to us in school planning, but the *containing* courtyard offers a total inversion of the court-classroom relationship. Here the "space between" becomes the primary fact.

Architects Charles R. Colbert and Mark P. Lowry describe the proposal as "a school placed in a large wooded tract of land which serves as a protective screen to isolate, both physically and spiritually, the educational function from the world without. Dominant forces in the learning process are experience and physical association. With this in mind, a series of gardens, plazas, and courts has been created to isolate and amplify certain phenomena, sensations, human emotions, and fields of thought."

The emphasis on isolation may prove alarming as an educational idea, but as an architectural fact, the school is no less accessible than any other. The suggestion of restriction in the selection of organized experiences may frighten some but is not basic to the architectural concept, which actually provides an opportunity for an almost infinite variety of experience. The treatment of the courts and their walls will be limited only by curricular intent and parent participation in furnishing constantly changing exhibits.

The classrooms are dimensionally and structurally standard units, but their disposition within the garden offers a completely new outlook as the child moves from one room to another. In a time much occupied with motivation, everything here is calculated to ward off monotony. The architects want the children to get out into the weather on their trips to the washrooms and the lunchroom. In a less rigorous approach the inclusion of covered walks would hardly destroy the architectural idea; nor would overhangs, nor entrances less bizarre than the proposed culvert. All details here are subordinate to the great and welcome idea of standard units set about in a walled garden in which the open spaces may be treated and used positively in a constant *do-it-yourself* program for teachers and pupils.



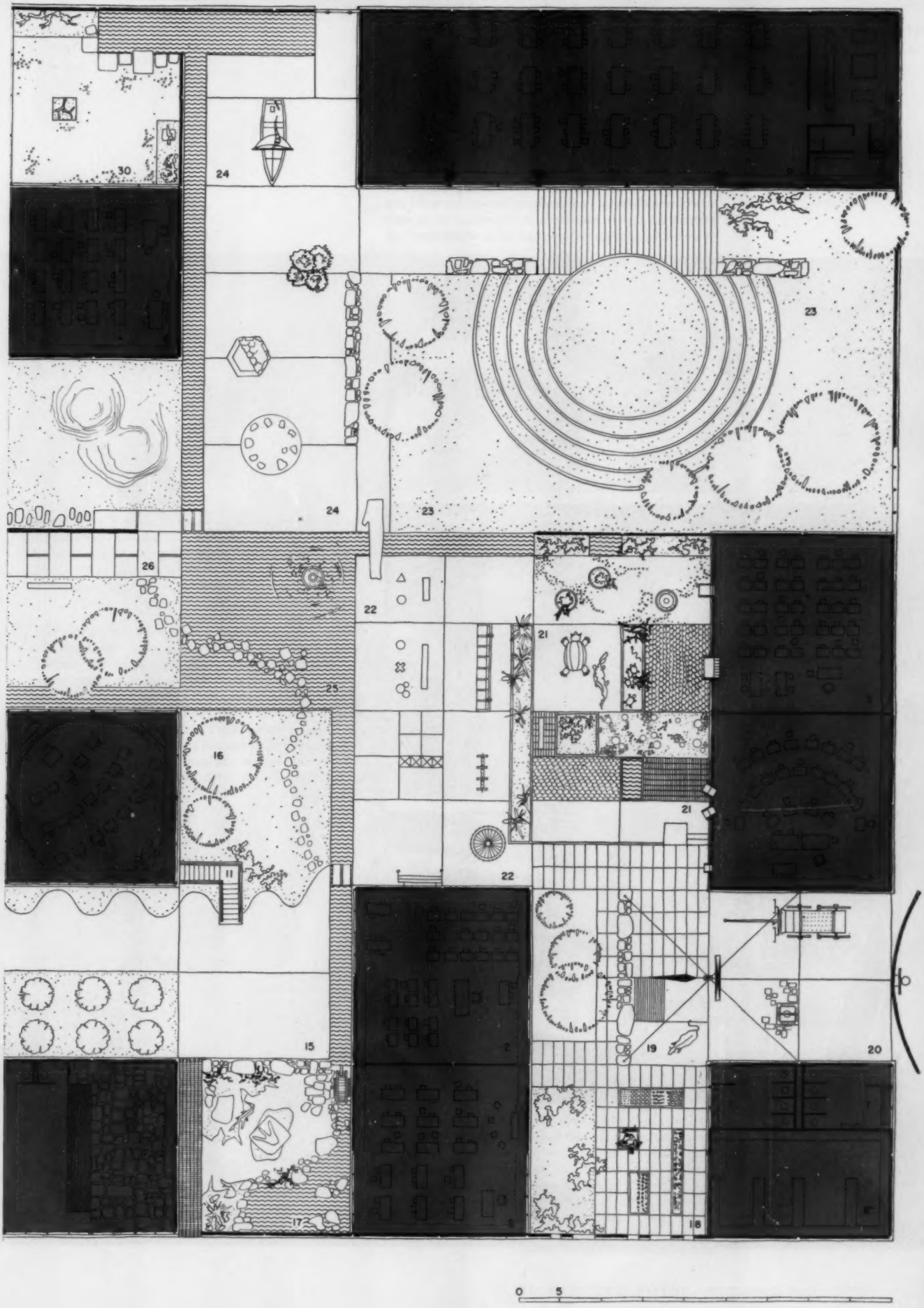
Charles R. Colbert, A.I.A., Architect-Planner; Mark P. Lowry, Senior Associate; William J. Hess, Jr., Assistant

SPACE ENCLOSURES

1. Kindergarten
2. First Grade Classroom
3. Second Grade Classroom
4. Third Grade Classroom
5. Fourth Grade Classroom
6. Fifth Grade Classroom
7. Toilets
8. Storeroom
9. Activity — Cafeteria
10. Kitchen
11. Administration (Over)

COURT YARDS, PLAZAS AND GARDENS

12. Court of Sound and Music
13. Court of Anagram and Alphabet
14. Council Plaza
15. Orchard Terrace
16. Clover Lawn
17. Sunken Court of Anthropology and Geology
18. Sunken Gardening Area
19. Animal Enclosure
20. Frontier Court
21. Biological Garden
22. Light and Color Plaza
23. Grass Theater
24. Fairyland Plaza
25. Water Source and Fountain
26. Court of Numeral Logic
27. Loggia of Theology
28. Court of Astronomy and Time
29. Courts of Techniques
30. Sculpture Arbor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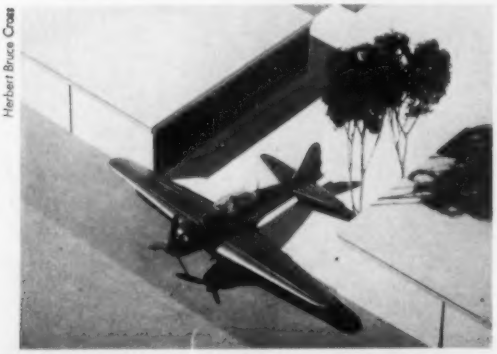
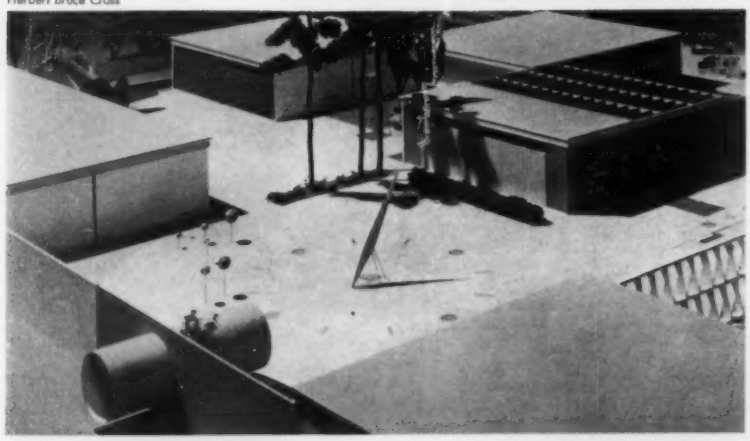
Entrance to the school beneath the wings of an airplane or through a large section of concrete pipe is suggested as typical of the romance which could be engendered in a school which presents no façades to the outside world and permits the greatest latitude in the expression of an oasis character independent of the actual means of entrance used



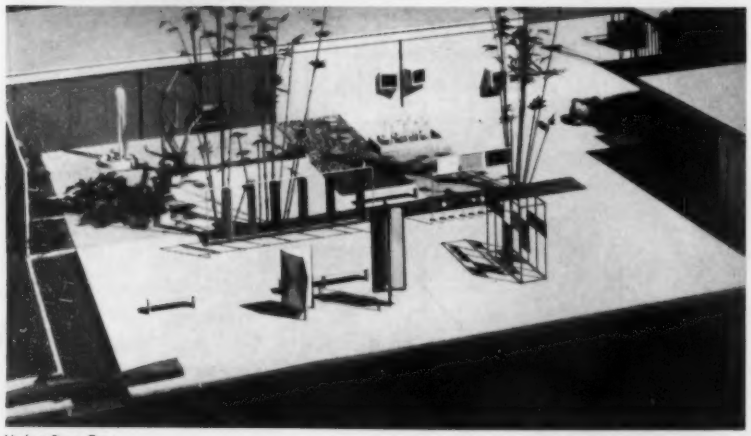
Herbert Bruce Cross



Herbert Bruce Cross

Both of the entrances shown at left lead directly into a "Court of Astronomy and Time" in which a large sun dial is the principal feature. Atop the pylon is a melodious, hand-operated signal bell. On the wall at rear right a giant, colorful abacus is mounted for use of the very young pupils

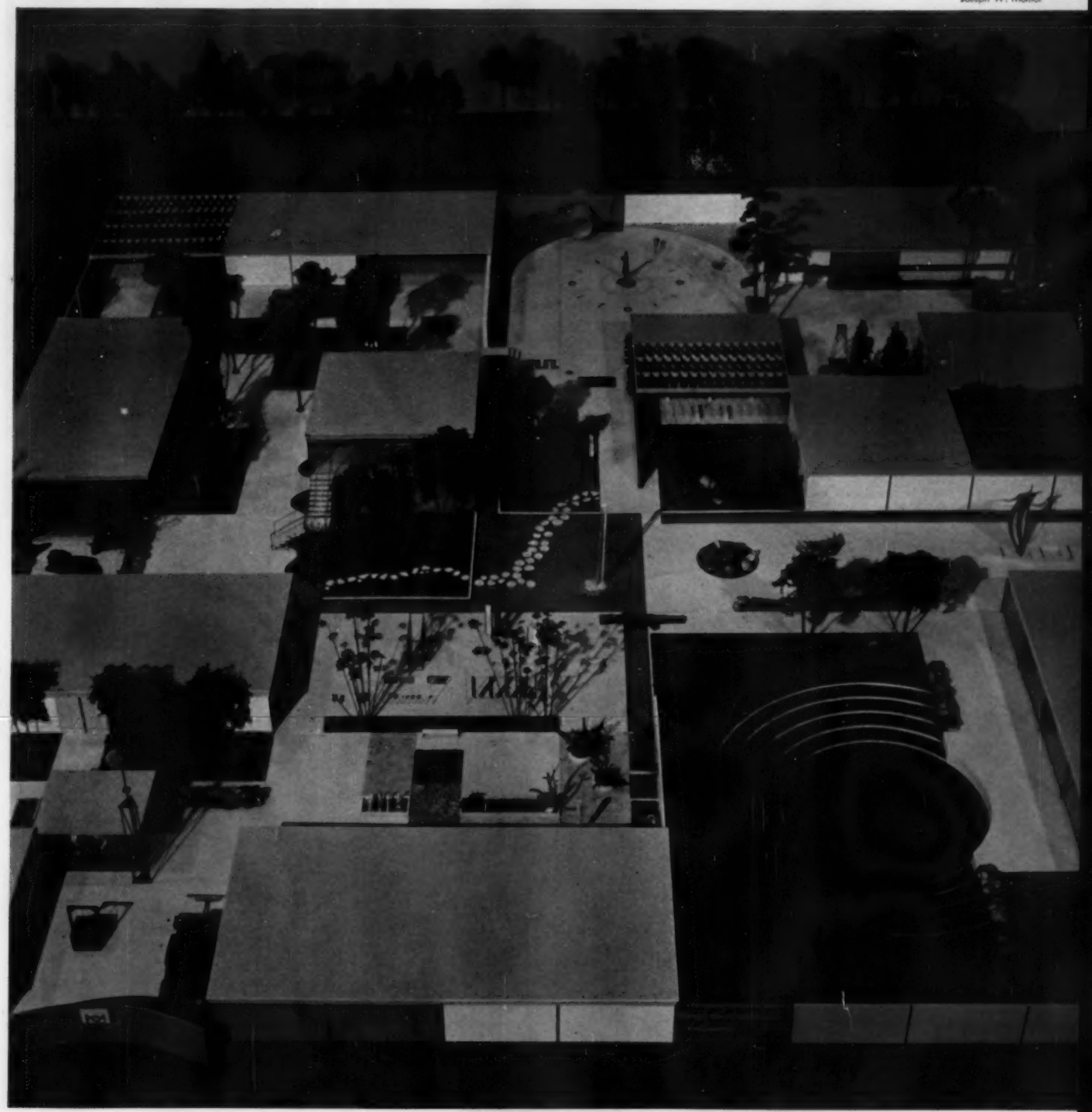
Narrow watercourses extending in all directions from the central pool divide the walled garden into quadrants. In the lower right area all children gather in the cafeteria and in the open-air theater alongside. Lower left is for first and second grades; upper left for kindergarten and third grades; upper right for fourth and fifth. Children may be generally restricted to their own areas so that the manifold garden exhibits and experiences may be measured out over their six-year life here. Administration offices are in the only two story structures adjoining central pool



Herbert Bruce Cross

Between the pool, outdoor theater and first and second grade areas is a Light and Color Plaza where "color from the spectrum and color from pigments are related in educational devices continued to exploit their characteristics." Wheels and superimposed frames demonstrate the basic principles of refraction, supplement and complement. Trees here and throughout garden are selected and grouped for appearance during the four seasons and as illustration of botanical variety

Joseph W. Molitor



Theatrical facilities are limited to the outdoor area between Light and Color Plaza and cafeteria. Of this provision the architects say, "Going barefoot in a clover patch is a long-remembered experience." The Grass Theater provides a location for assembly, outdoor productions, and passive recreation where children may enjoy the feel of clover between their toes. The performing area may be extended back into the cafeteria whose curtained glass wall can act as a proscenium and provide screened wings for some elaborate productions

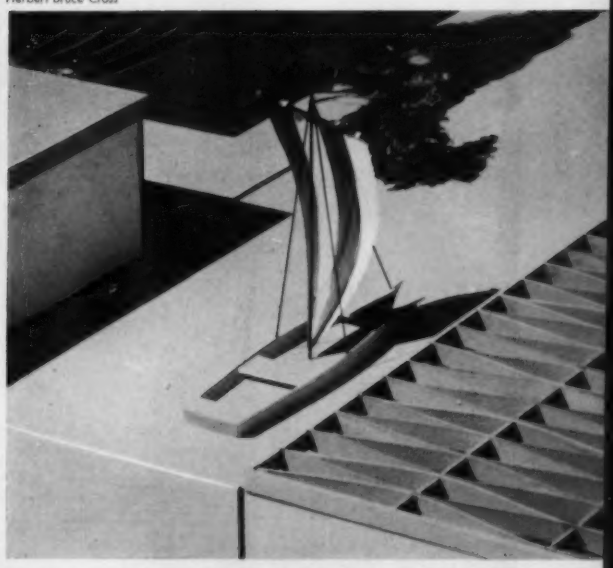
Herbert Bruce Cross

Entrance to first and second grade area is through a Frontier Court featuring a stagecoach, an oaken bucket well, a windmill and an animal enclosure where single animals will be housed for short periods to afford close range observations. Basketball hoop with curving back wall illustrates small emphasis placed on organized athletic facilities which may not be necessary for this age group but which could be incorporated easily in the flexible arrangement of building units

Herbert Bruce Cross

OASIS

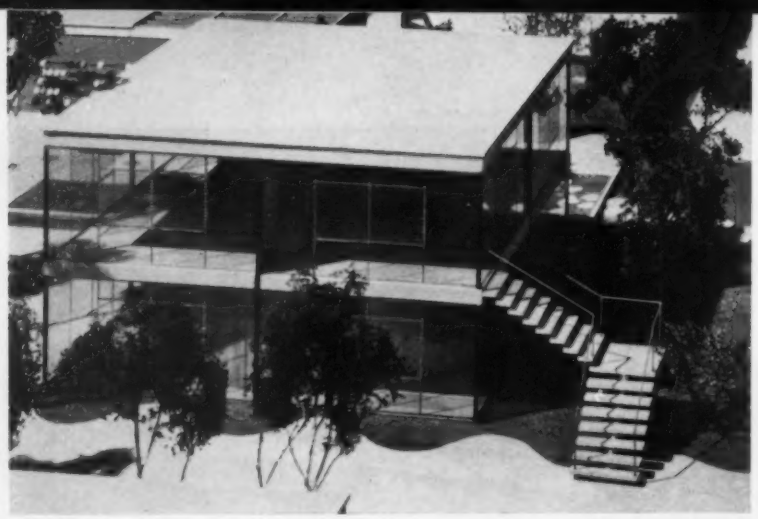
Herbert Bruce Cross



In the plaza adjoining the cafeteria and outdoor theater the architects suggest use of a group of simple abstractions of objects recalling adventure. In the imagination of the children "the boat" can be Prince Valiant's barque, the Santa Maria, a Pirates' gallion or Ahab's whaler. The arbor at right shelters a Sculpture Garden

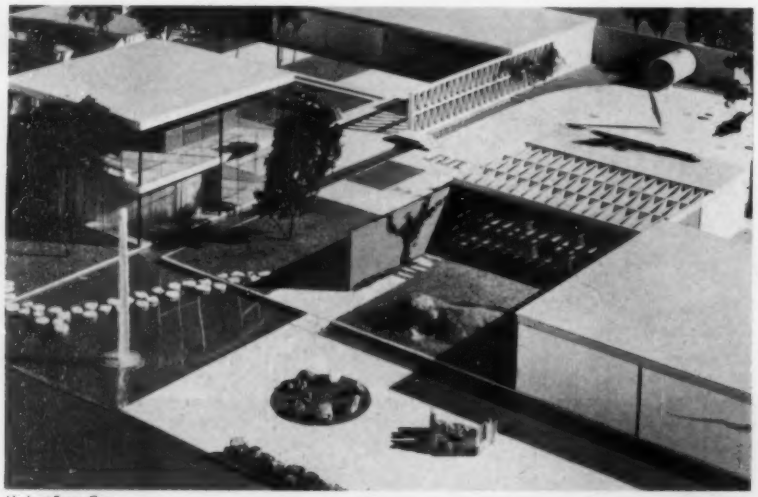
Behind the Light and Color Plaza are the outdoor theater and cafeteria at left, the second grade classrooms at right. These are windowless and afford children only selected visual experiences through limited vision view boxes. In contrast the third grade is housed in a "glass box." While neither are essential to scheme they are typical of motivating philosophy

Joseph W. Molitor



Herbert Bruce Cross

Administrative offices are located above the third grade classrooms whose four walls here are entirely glass. In second grade the children are entirely removed from the outdoors in order to establish maximum change and emphasis in visual stimuli



Herbert Bruce Cross

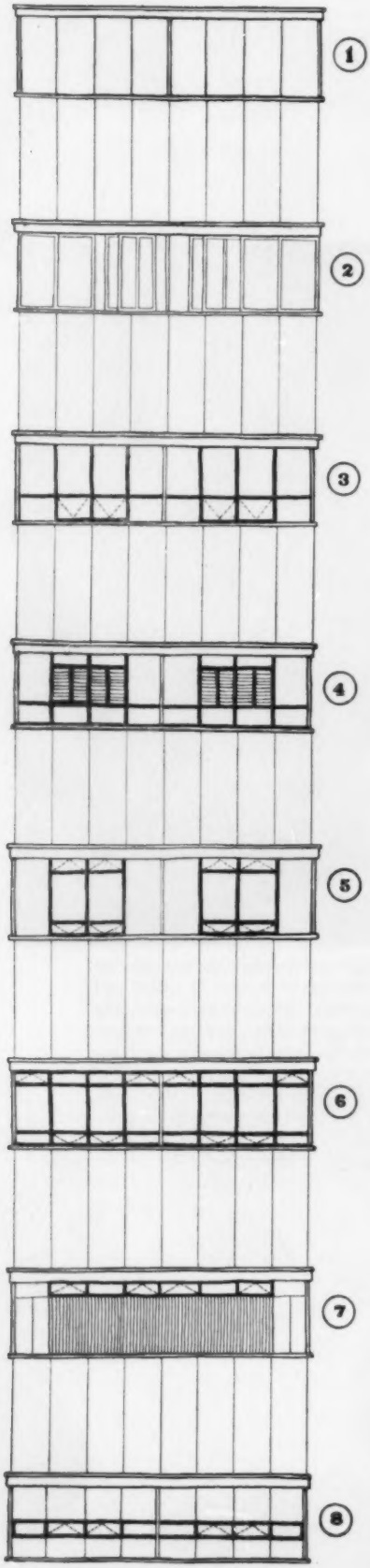
At the center of the "oasis" water is an appropriate symbol and tool. A central water jet feeds sluiceways and reflection pools. Smaller groups of jets are proposed elsewhere as "psychological aeration points" and produce a misty coolness below the tree groups. Waterwheels, miniature watercourses, lily ponds, and aquariums are fed from the same source of recirculated water

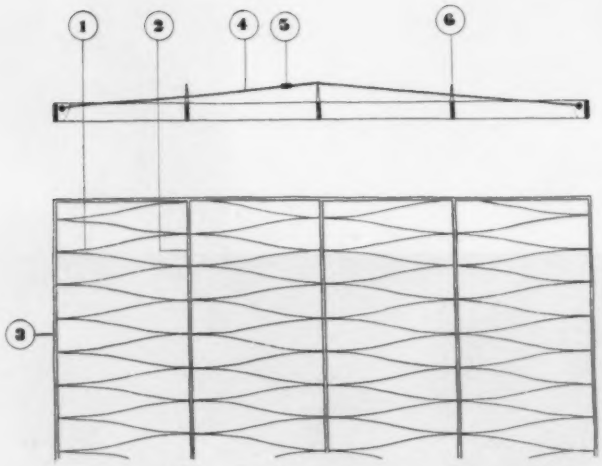
All structures are designed on a four-foot module and to be carried out in steel-and-plywood. Nowhere are there overlays or covered walls although there are occasional arbor-covered areas as seen below in the Sculpture Garden and the Loggia of Theology behind it

Herbert Bruce Cross

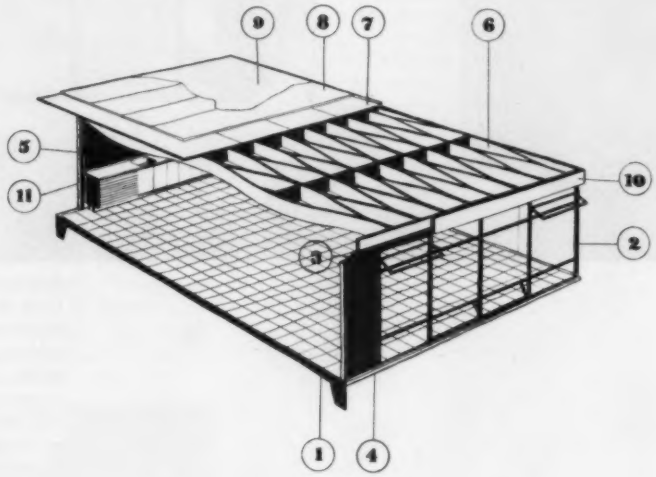
Joseph W. Molitor

Although it is not basic to the planning principle set forth in this school the use of a rigorous spatial and structural module is a natural and useful by-product. The enclosing wall of the garden provides a unifying dominant which permits great flexibility in positioning the classroom units and almost complete freedom in the choice of wall panel types for various classroom purposes and orientations. In the above picture the fourth grade classrooms are on the right, the fifth grade on the left. This view is from the airplane entrance and looks at the Court of Astronomy and Time in the middle distance

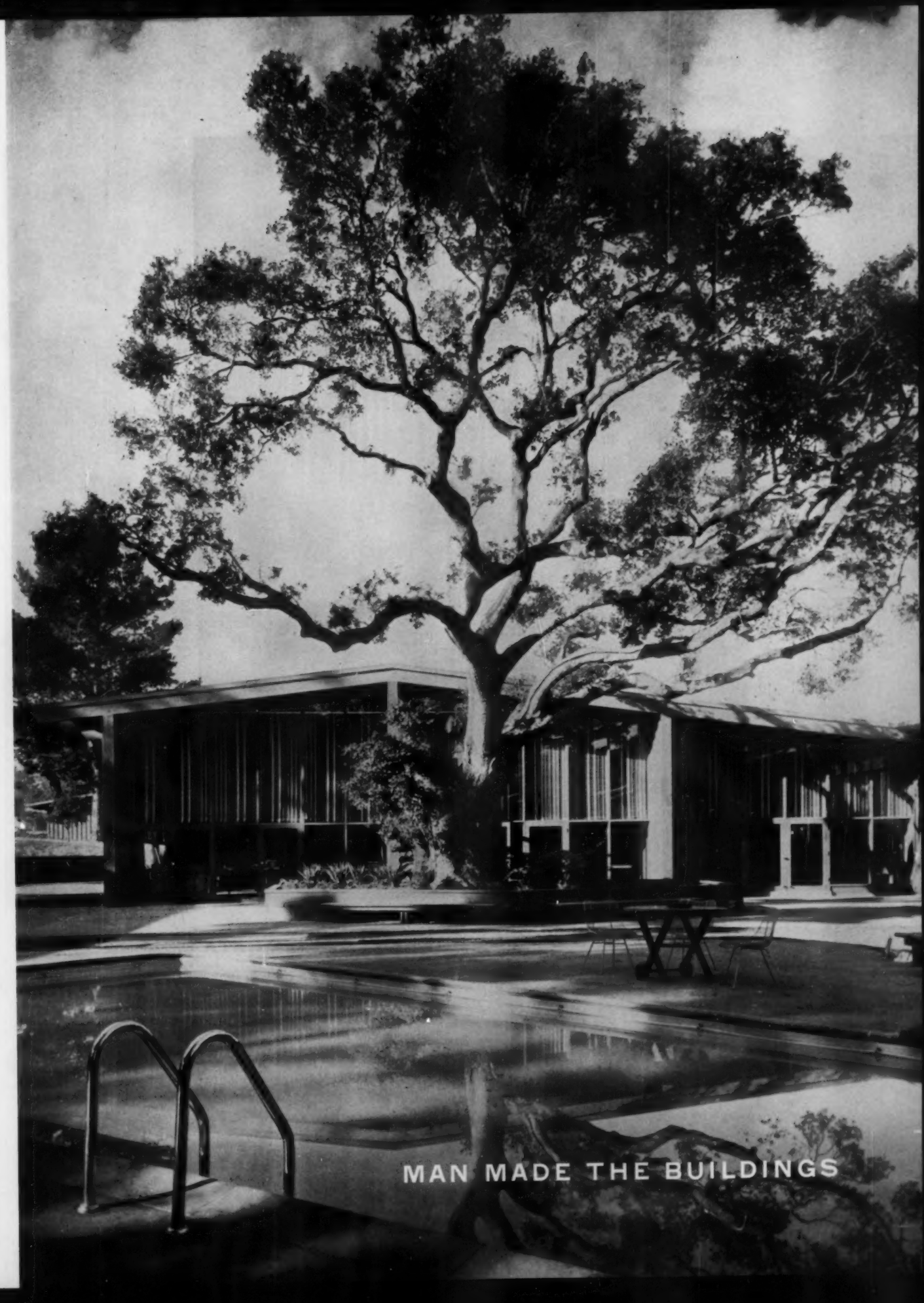




In this proposal plywood is employed as the principal building material. In the drawing below an expanded plywood roof system of continuous ⅝ in. ribbon joists (6) with 2 by 12 block spacers is supported on a light steel frame of columns (2) and (5) and angles (3). Slab floor (1), insulated plywood wall panels (4), and a built-up roof (9) over rigid insulation (8) and plywood sheathing (7) makes up typical unit which employs a space heater (11). For heavier loading conditions the optional trussing section, above, uses stressed cables with turnbuckles and trussing struts



Wall panel combinations shown at left provide a full range of possibilities from the solid insulated panels (1), to panels with vision strip (8); (2) and (3) show full length sliding glass doors and full length glass with hopper windows; (4), substitute louvers in the full glass wall; (5) and (6) use combinations of vented glass and panels and (7) shows entrance panels in combination with solid walls

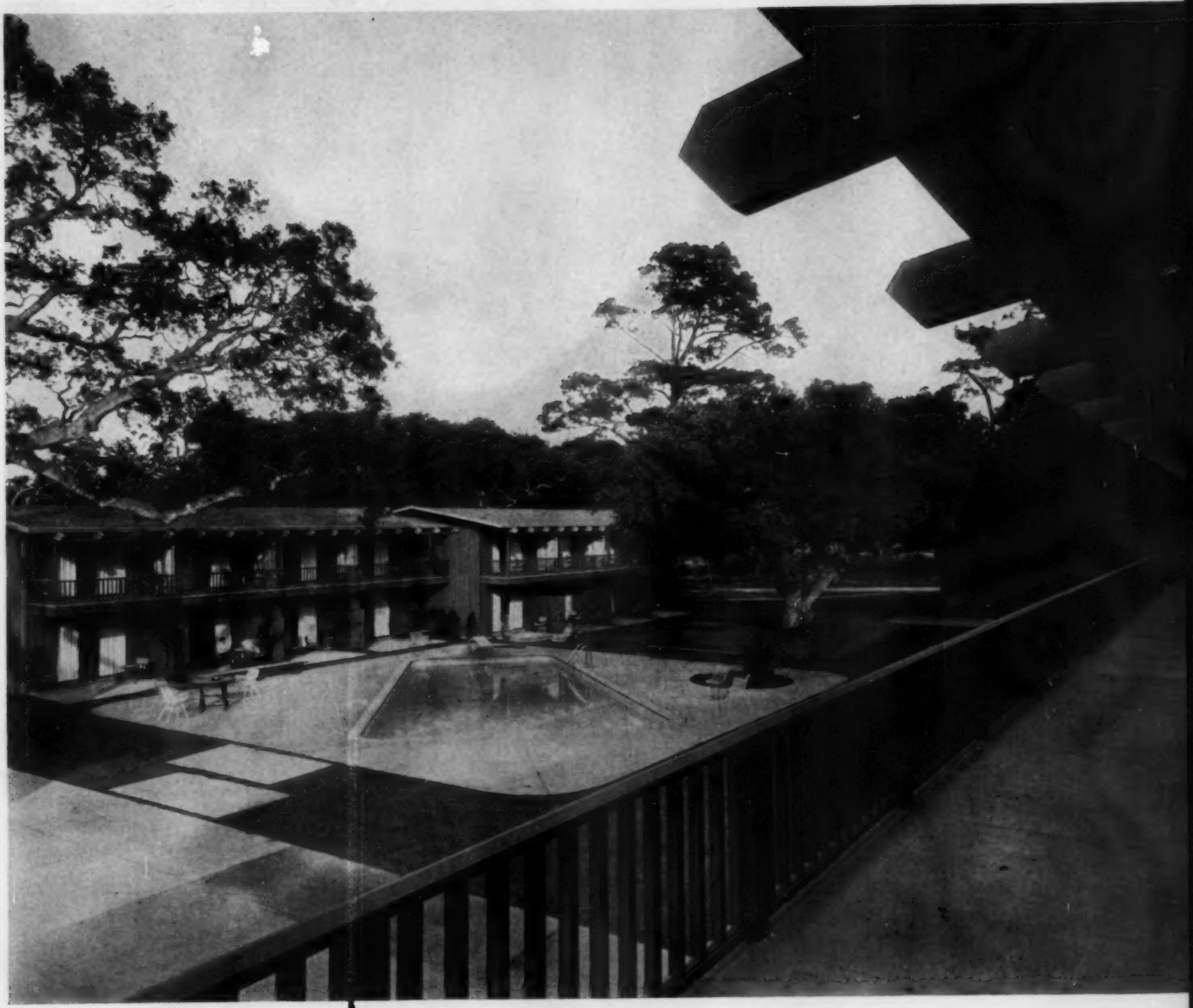

MAN MADE THE BUILDINGS

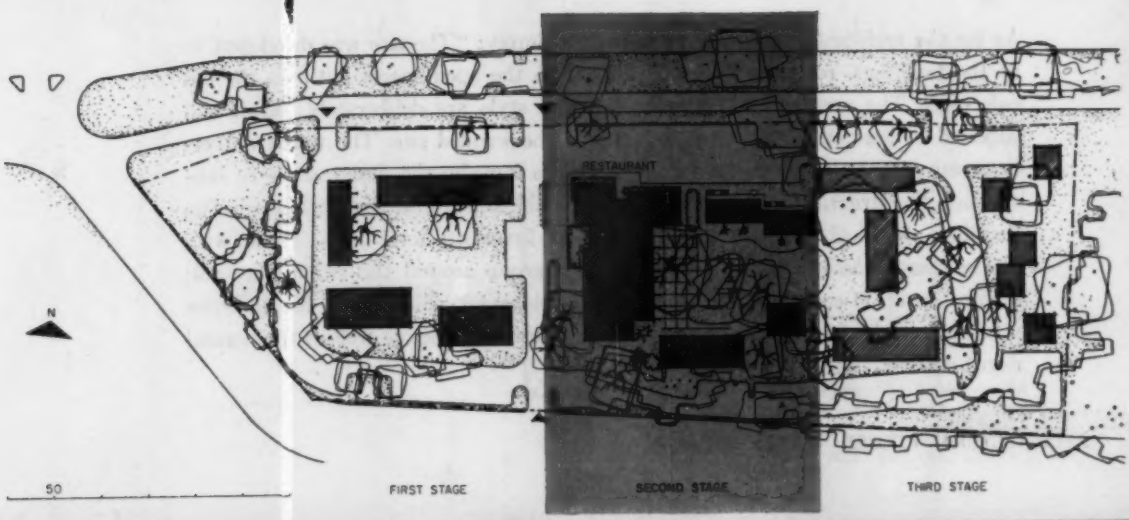
All photos by Morley Baer (including p. 177)

MARK THOMAS INN, MONTEREY, CALIFORNIA

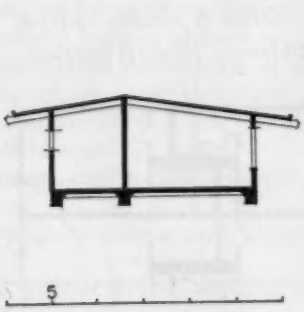
Architect: John Carl Warnecke. Landscape Architect: Laurence Halprin. Interior Designer: James Aldrich. Mechanical Engineers: Clyde Bentley

How to design buildings for sites of overwhelming natural beauty is not one of the main concerns of contemporary architectural study. Probably, in any case, this is not a topic for academic discussion; one could approach it only by specific example. And where a better example than this one? Man made the buildings here; man also added several contrivances to the site. But man was inspired to throw away the book and follow unabashedly the call of a great gift of beauty. And if this course seems one of self-abnegation, well, man won a national A.I.A. award of merit for the first stage of this building operation (page 182), and another for the second stage, including the restaurant (above).




RESTAURANT
N
50
FIRST STAGE
SECOND STAGE
THIRD STAGE

As for the architect's motivations, he writes simply: "The site was developed to fit the buildings, roads and parking areas into the open spaces between the old oak trees. The architectural organization and style are deliberately casual and subdued to harmonize with the character of the wooded site. The wooden structures are quiet; parked cars are not allowed to intrude; the design seeks to subordinate the structures to the great beauty of the land forms and the trees." The buildings shown above (also page 179) add 28 luxurious hotel units. These, with the restaurant building, form a second-stage group around the swimming pool; a third group is contemplated for future development. Dining and bar facilities now completely fit the inn for convention or meeting use, as well as the normal resort custom.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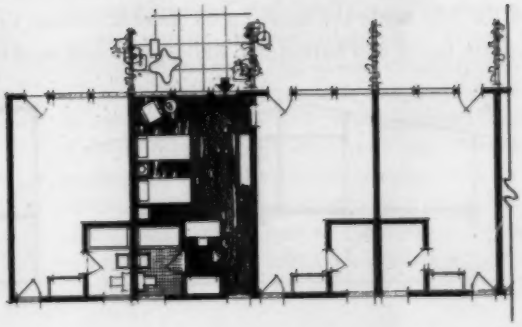
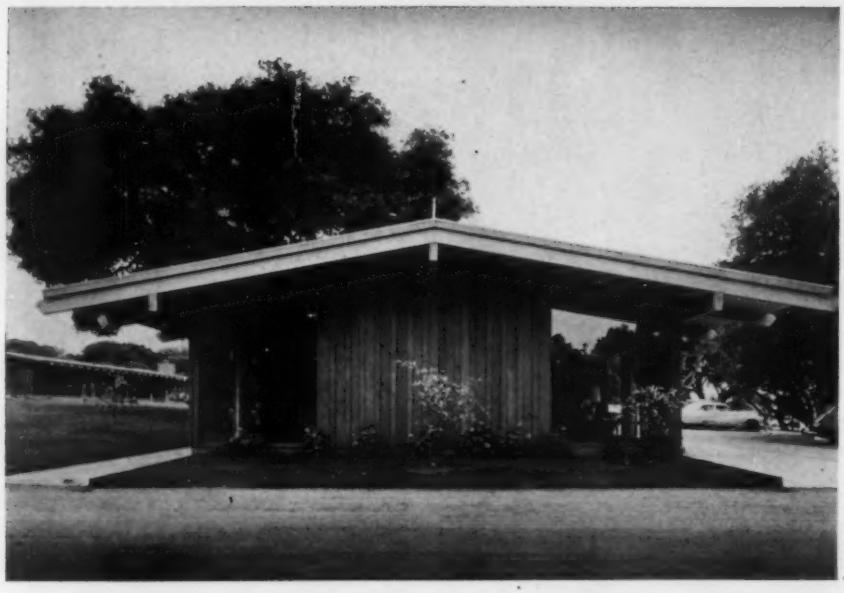
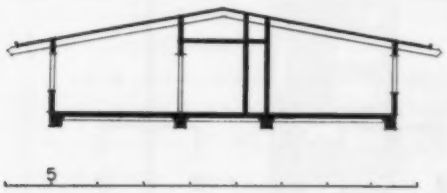
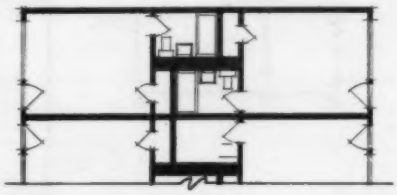




This first group rather established a style for the later buildings, though the success of the first made the second a bit more luxurious. Construction is concrete slab on gravel, board and batten side walls, plank roof on 4 by 10 beams, plywood interiors.





The author, viewing with fresh alarm, classifies decoration as:

***1** Applied* ***2** Insinuated* ***3** Invited*

roughly in the order of their offensiveness to him

DECORATION RIDES AGAIN

By ROBIN BOYD

Ornament should appear, not as something receiving the spirit of the structure, but as a thing expressing that spirit. . . . A decorated structure, harmoniously conceived, cannot be stripped of its system of ornament without destroying its individuality. — *LOUIS SULLIVAN*

WITH THE LEAST possible historical research I am able to quote the above words, for they appear, along with other statements on ornament and organisms, on the wall of the Sullivan memorial exhibition which is presently touring the country outbound from Chicago. Here is an unequivocal statement in the old master's best form, and any interested layman who has visited the exhibition doubtless began thinking as he read it, standing among the bronze grilles and decorative samples displayed between the architectural photographs. And the train of thought begun by this nostalgic show, with its emphasis on ornament, probably ran on as he stepped out of the gallery and observed the sunlight glinting on the patterned metal panels of the curtain-walling on some new office building across the street. The thought will stir again when he sees the mural-lined lobbies of some new buildings, when he brushes past their sculpted screens, and when he hears the new calls for the introduction of painting and sculpture into architecture. Eventually he is likely to be led to the conclusion that the plain, unadorned building of recent years was (as he always guessed) a fad, a fashion whose days are numbered. Ornament is returning: check your investments.

Being an alert fellow, however, the layman perceives that the new ornament is not the sort of thing that he remembers in the Victorian parlor or the modernistic movie palace. He sees that if building adopts a rational basis and abnegates the special construction of non-functioning and non-structural parts, then there can be only three guises for ornament, three ways in which it can ride its vehicle architecture:

By application: fastening itself to the surface of the forms.

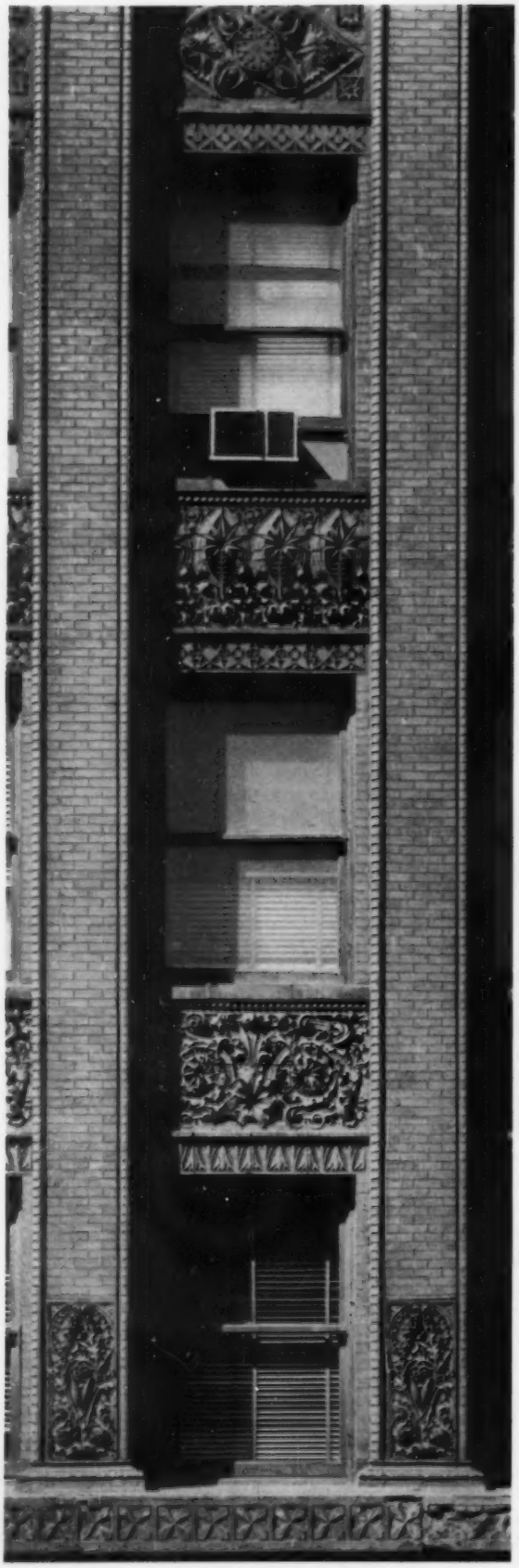
By insinuation: decoratively shaping parts which are required anyway.

By invitation: in the guise of what is commonly described — to distinguish it from architecture — as "art"; that is, any painting, sculpture or so forth with a meaning of its own.

Now, the first of these guises may be dismissed. The new ornament (the layman realizes) is not like the old kinds. It is in the best possible taste. The idea of gluing on decoration is unthinkably trite. Ornament must enter in the second or third guise. It must be integral, organic, a part of the conception of the building: either the tasteful patterning of some material which has been specified already, or "art" magnanimously invited by the utilitarian structure to occupy a prominent position. Thus one should understand that the present revival of ornament represents no turning back on the principles of simplicity introduced by the modern movement; it is merely a more enlightened interpretation of those principles.

But the disconcerting thing about these comforting arguments of the day is that they have been used before, and to justify unspeakable vulgarities and crass absurdities in the most sordid depths of architectural practice. No architect ever seriously suggested that ornament should be added to a building design already complete in itself. The designer of the fussiest Victorian façade felt his creation was not complete until he added the last horrible piece of adornment; to strip off any would be to destroy some subtle quality, some *je ne sais quoi*, which he had carefully "conceived-in" and nursed to completion.

The anti-ornament ethics embodied in the early denouncements of decoration by Horatio Greenough ("the instinctive effort of infant civilization to disguise its incompleteness") and Adolf Loos ("evolution of human culture implies the disappearance of ornament") were not concerned with the casual commercial decoration. They were aimed at precisely the sort of self-righteous ornament which is now being revived and revered. The old rebels meant what they said when they asked architects to abandon the savage urge. When they talked of simplicity they seriously meant plainness, believing that architectural forms and spaces should be designed self-sufficient, using materials explicitly, to be complete in themselves.



Hedrich-Blessing

APPLIED. Louis Sullivan decorated his buildings (Wainwright) "because he could not resist fondling his materials, like any happy craftsman, but he knew it was only a side issue."

While this philosophy is still widely if not universally accepted by the architects, the unfortunate thing is that in practice it frequently leads to a box of infinite dullness. The question today, then, is whether we should toss out the philosophy or the way it is most frequently practiced. These are the alternatives if the richness which everyone seems to desire is to be returned to building.

Thus it is significant at this time that the aspect of Louis Sullivan's work which was featured in his memorial exhibition was his affectionate ornamentation.

It is significant that the Museum of Modern Art, displaying Edward D. Stone's U. S. Embassy design for New Delhi among six outstanding "Buildings for Business and Government," chose to feature a lifesize section of the ornamental terra-cotta grille which surrounds the building.

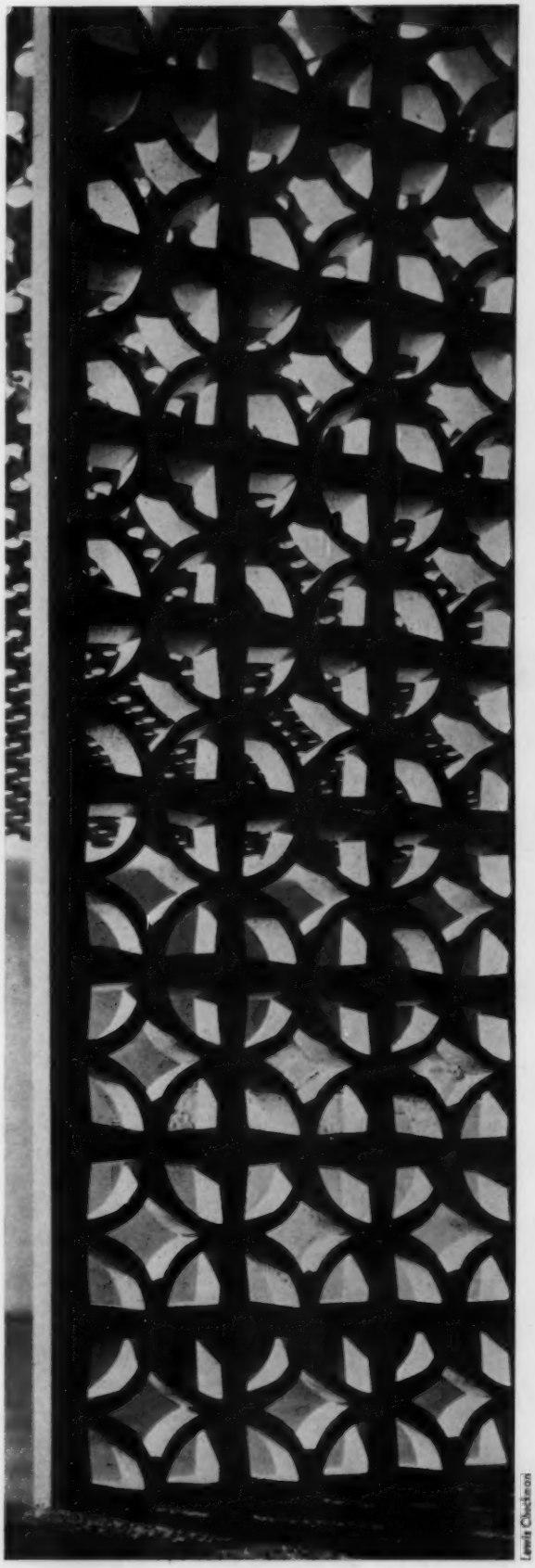
It is significant that the Museum's catalog of the same show should have said:

Sculpture and painting have not become as much a part of modern architecture as many people would like them to be. Merely to install a sculpture, however large, is not enough. Its successful relation to the building, unless it is structurally self-evident, must depend on the exact coincidence of the architect's and the sculptor's intentions.

Heaven forbid that I should suggest any impatience with the Sullivan grilles, Mr. Stone's terra-cotta or the idea of introducing sculpture and painting. I merely remark that it seems significant that a rather hoary, weighty, defeatist attitude to architecture, typified by these three incidents, should be rising to the rarefied air at the top of the modern movement; it is simply that one begins to wonder what happens to a movement when its avant-garde turns back to other arts for help. These approaches to Sullivan, Stone and sculpture represent the three alternative approaches to adornment, and if we are seriously thinking of re-admitting ornament we might briefly consider them in turn.

Most of the Sullivan's ornament was not, for all his protestations, an integral expression of the spirit of his building forms. It was separate, a sensitive artist's gift from the heart to a building he loved. Mostly it remains like a cherished gift on the mantleshelf, a handsome acquisition made so much nicer by the fact that it was not expected nor really necessary. Sullivan made ornaments because he could not resist fondling his materials, like any happy craftsman, but he knew this was only a side issue. "It is not evident to me," he admitted, "that ornament can intrinsically heighten [architecture's] elemental qualities." He was first and always an architect, and accepted a rational basis for architecture. In doing so he voluntarily restricted his ornament to the three guises: application, insinuation, invitation

INSINUATED. Edward D. Stone's grille for the New Delhi embassy design, "is an admission in the second guise . . . the architect is to be congratulated on keeping the pattern so restrained."



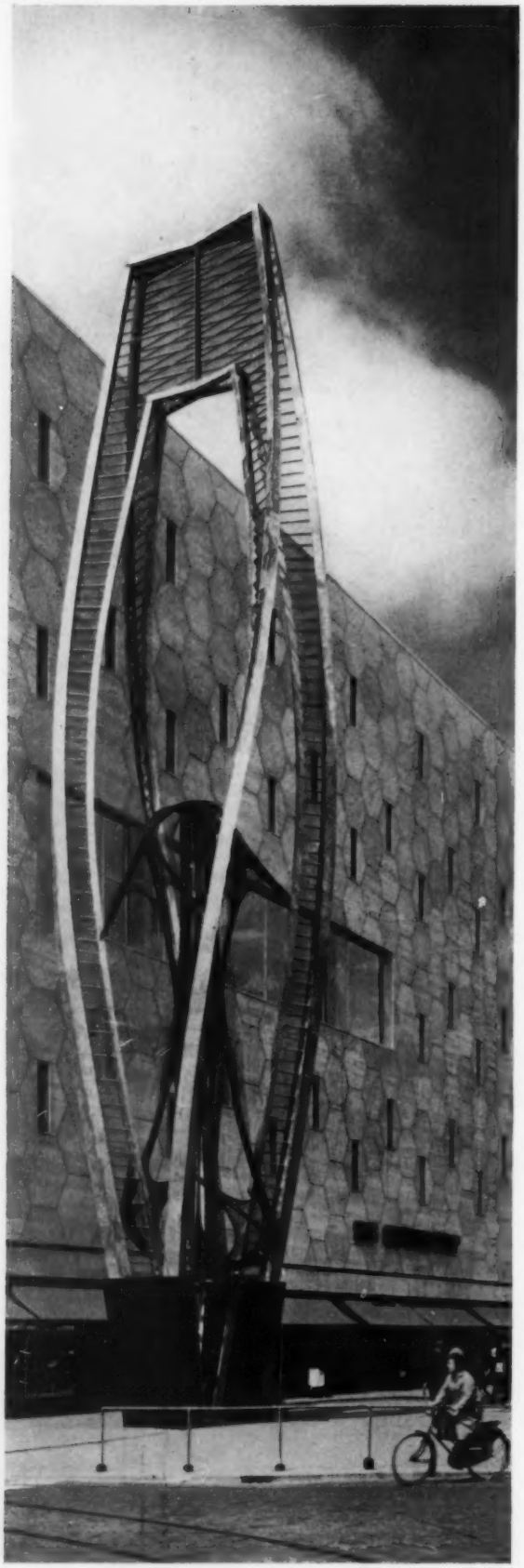
Lewis Checkman

Since the ornament he liked had no separate non-architectural meaning it was not in the third category of invited art. But he was apt to use either of the other guises. Sometimes (e.g. in the Wainwright Building) he insinuated ornament; sometimes (Carson, Pirie, Scott) he applied decoration which would be just as fascinating if it were unhooked and displayed in the museum. A lot of it was, in effect, unhooked and shown at his memorial exhibition, where it had nothing to do with architecture.

The terra-cotta grille for New Delhi, on the other hand, is an admission in the second guise, like the cups and darts and diagonal dents in the metal panels of some new office curtain walls. It is one of a number of Eastern-Western devices in a sharply formed, imaginatively textured building where the twain may meet. Each terra-cotta block is pierced to leave a quadrant in silhouette and they build up together in the wall to produce a fetching combination of circles and rectangles, with that distinctive inter-racial quality of an Indian movie poster. The screen itself is an important part of the formal conception inasmuch as it presents, while shading the glass, a continuous surface for the free-standing, gold-colored steel columns to play against.

Since technology has not yet provided anything better to fill the long-felt want for a sun-sieve of this sort, terra-cotta block was a practical choice for the job. And since terra-cotta blocks are amenable things, the architect is to be congratulated for keeping the pattern so restrained. There can hardly be doubt, however, that an even more restrained pattern would throw more emphasis on the form of the building. This is the basis of the objection to all adornment that slips into rational architecture in either of the first two guises. Any patterning may be admitted if it pleases the architect and if the material falls easily into the shape — by all means let us not invoke "moral" laws — but the patterning is at best inconsequential and at worst in distracting from the enjoyment of the form. The screen at New Delhi may not turn out to be distracting, but featuring it at full-size in a public exhibition must have diverted a sizable amount of lay interest from the architectural essentials.

Now consider the third guise, the invited art work, and the Museum of Modern Art's catalog statement. "Merely to install a sculpture . . . is not enough," it said. "Its successful relation to the building . . . must depend on the exact coincidence of the architect's and the sculptor's intentions." Then it added: "As an alternative the architect may execute the sculpture himself, as Mies van der Rohe proposes to do for the Seagram building." I submit that all this is precisely the way *not* to introduce art into architecture. The art re-



INVITED. Naum Gabo's sculpture, for De Bijenkorf in Amsterdam (Marcel Breuer, architect). Here, says the author, the artist must be free to express himself in his own medium.

ferred to in the first part of the statement is something commissioned from an outside artist, a man with an artistic integrity of his own, one assumes, and experienced in a medium capable of expressions outside architecture's range. If this man attempts to echo the architect's intentions (the reverse is never seriously considered) his sculpture will be mangled. Any separate meaning it could have will be distorted or diluted. No matter what euphemisms are used, it will be more ornament than art. It will be ornament which has the special advantage of leaving the architect's hands clean.

In the Seagram building, however, Mies himself is undertaking the sculpture which will sport in the two pools on the front apron. Why? Assuming that the father of simplicity in this country is not turning to ornamental trifles, he must have some compelling reason to sculpture: a message not capable of expression in his architecture. Then these pieces will not be part of the building, and coincidence of intention is irrelevant. In this case any sensitive sculptor could have been let loose on the pools. It is certainly a charming thought for an architect to do his own sculpture, but let us not confuse this hobby with his architecture.

Of course architects should see to it that more sculpture and painting are encouraged to enter buildings — and more music, and everyone should have more time to settle awhile in a favorite building and read Dylan Thomas.

Architecture thrives in the company of other arts, but the suggestion that she needs their support, is empty and incomplete without them, is a recurring indignity which no other art has to suffer.

Invite painting and sculpture and give them room, but let them speak their own minds; they are alive only when they are free. Architecture can never command their language, as they can never share the intimacy of her relations with humanity. Welcome them, but not in any guise of ornament.

Again, welcome sensitive selection in the insinuation of texture and color. I am not suggesting a blanket condemnation of everything not dictated wholly by the engineer or the banker. But at the point where insinuations begin to look important in themselves, when they lose servility to the form of the building and become in the least self-assertive, uppity — then immediately we can call them ornament and reach for a scalpel.

Ornament has no worthwhile meaning of its own, but is parasitic, riding on buildings, drawing its subsistence from the forms it rides, inevitably detracting from them and weakening the impact of architecture. It is, therefore, never an addition but always a subtraction. The forms and spaces should be a delight in themselves without anyone feeling any need for adornment; architecture can't escape this old axiom. It can only keep on delaying facing up to the implications.

DANISH CRAFTSMANSHIP BUILDS A TOWN HALL

By C. E. STOUSLAND

SIMPLICITY, flexibility, excellence of proportions, together with a craftsman's attention to details serve to elevate the Rödovre Town Hall well above the general run of glass boxes of the sealed skin idiom to which it bears such a striking outward resemblance. Leading Architect Arne Jacobsen's disciplined design of the three-storied façade is relieved by the simple free standing canopy which gives both dignity and emphasis to the principal entrance from the plaza fronting the building. A plastic quality is provided by the operating windows, which when open, create a pattern not unlike the Bertoia wall which is usually found in conjunction with the better boxes. The handling of the details is of that high level of craftsmanship which has long been associated with furniture, toys and silver of Danish origin.

LEGEND

A. Entry

B. Foyer

C. Corridor

D. Offices

E. Council Chamber

F. Meeting Room

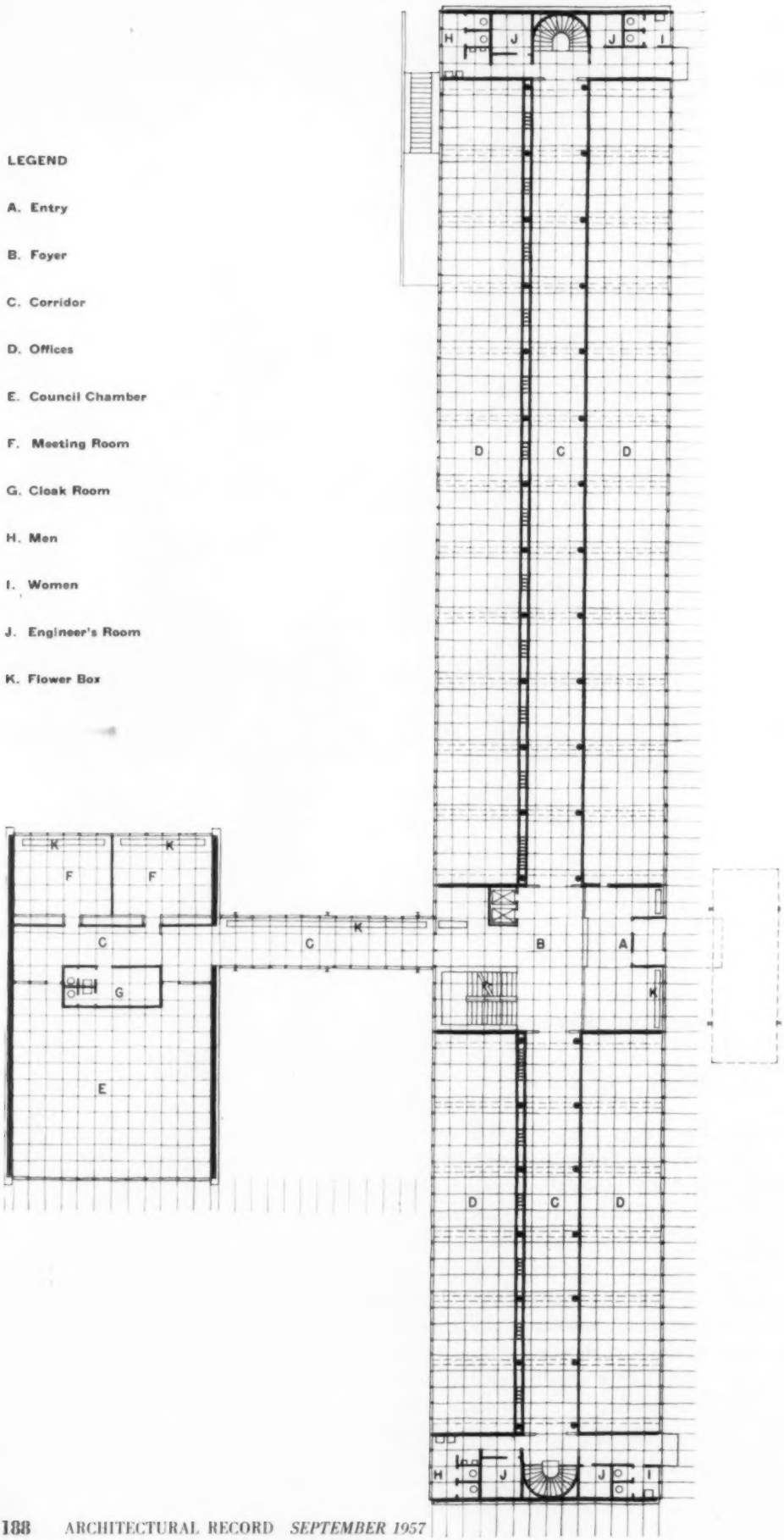
G. Cloak Room

H. Men

I. Women

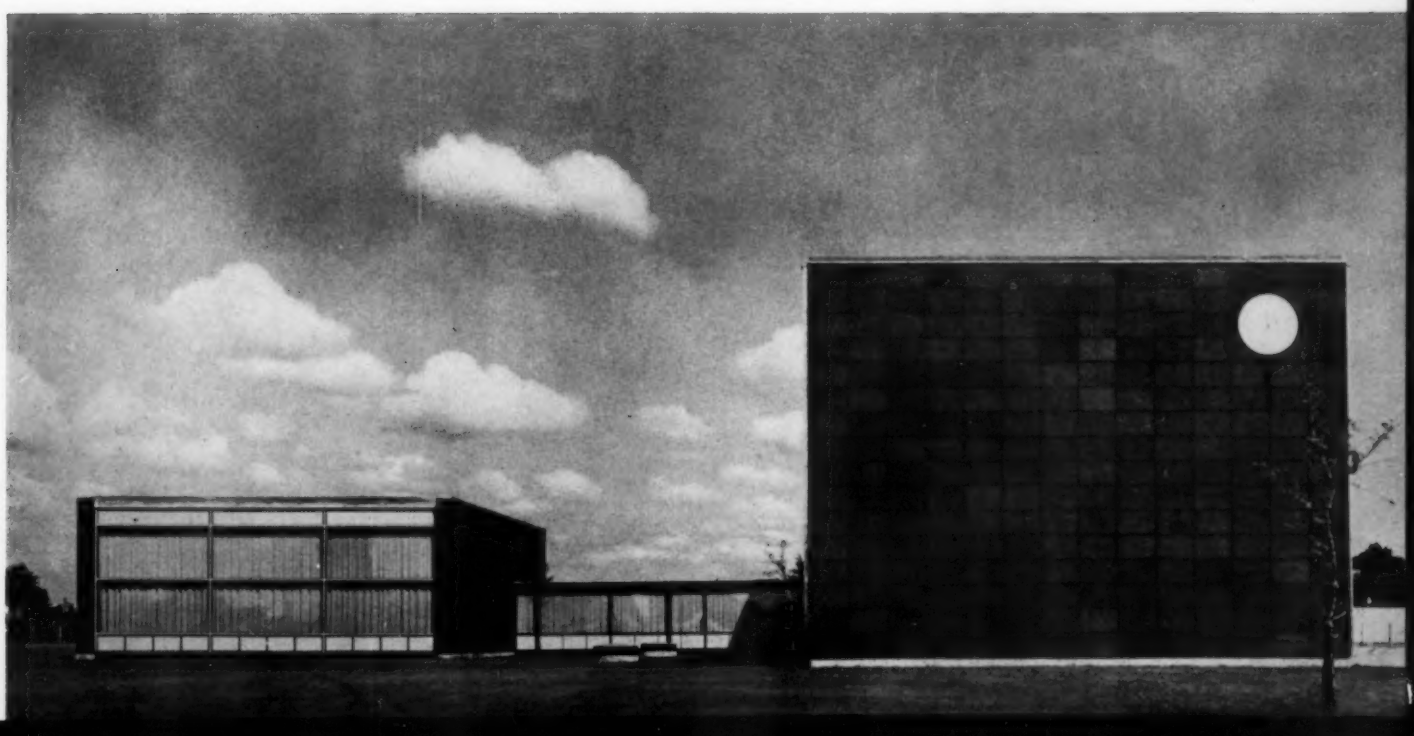
J. Engineer's Room

K. Flower Box



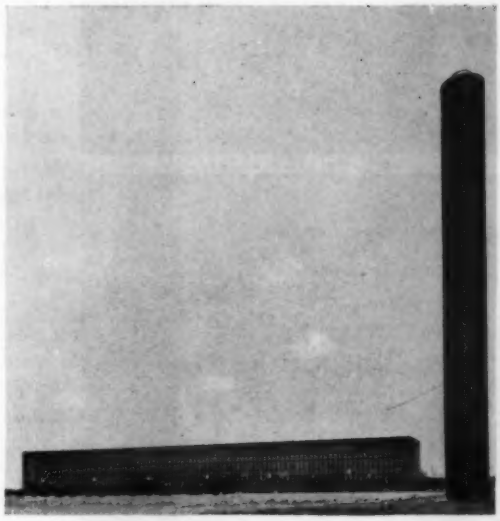
RÖDOVRE TOWN HALL

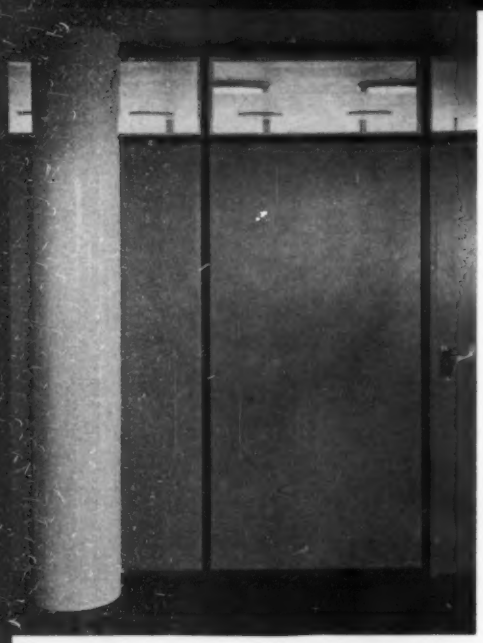
A cantilever structural system is employed in the main office wing. As illustrated in the section at right, the cantilever is supported by two rows of columns at the corridor, freeing the exterior walls of structural supports and making possible maximum flexibility in office arrangements. All of the mechanical services are incorporated in a modular system which permits relocation of office partitions within an interval of one meter. Heating is from a central heating plant which serves a number of buildings in the area. The continuous acoustical clad ceilings were installed prior to the partitions. The partitions are demountable standardized elements of light metal construction sound insulated with lightweight concrete. Offices of officials are provided with double partitions to insure privacy. With a bi-nuclear scheme (see below and left) the idea of flexibility, so well developed in office arrangement, is extended to permit increased usage of the very fine conference-council room.

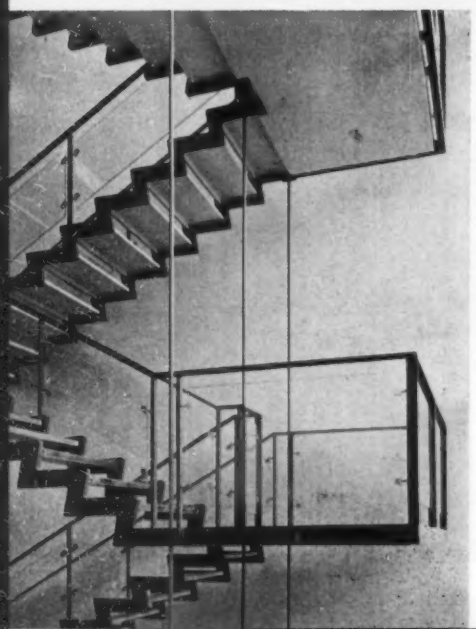


RÖDOVRE TOWN HALL

The conference-council room illustrated at left is perhaps the finest of the interior spaces of the Town Hall. This by virtue of its scale, proportions, use of materials and well designed furnishings. In contrast to the overall feeling of simplicity a touch of delicacy is introduced by the ceiling lighting. The small regularly spaced fixtures suspended on metal rods provide an effective busyness which is a welcome intrusion in a space which might otherwise suffer from over simplification. At right an overall view of the building from a distance includes the stack of the central heating plant making the building even more reminescent of our domestic variety of this type. Below a night view points up the proportions of the free standing canopy and the lower canopy connected to the building which projects under the larger, providing complete cover at the entrance and acting as a transitional element bringing the entrance down to a human scale. At lower left, a partition detail.







RÖDOVRE TOWN HALL

Top — Lightweight metal partition between corridor and office. Note continuous acoustical ceiling through glazed panel at the top of the partition. The treatment of the door handle and the escutcheon is typical of the attention given to details throughout the building. Center — From the council room a row of delightfully simple desks indicating some leg pulling on the part of the architect. The architectural amputation is performed with ease and grace worthy of the direction — leggiero. Beyond the reflective wall and to the right is the connecting link with the main lobby. Bottom — The feature of the main lobby is this rather unrelenting stair of steel and hardened glass, which though skillfully executed is hard, mechanistic and cold in contrast to the uniformly sensitive handling and character so evident in the remainder of the Town Hall. This seems to be a case of the spirit indeed quickeneth but the overall effect profiteth nothing.

THE COURT HOUSE CONCEPT

By IAN L. McHARG

THE FREE STANDING, single family house in suburb and countryside from such hands as Frank Lloyd Wright, Mies van der Rohe, Le Corbusier, Philip Johnson or Richard Neutra undoubtedly represents the greatest contribution of modern architecture to art and environment. Bear Run and the Farnsworth House, Villa Savoie and the Johnson New Canaan House offer a superlative environment for the exurbanite but what of the city dweller? Is not the urgent challenge to modern architecture to provide a new town house, as humane as those designed for the suburbs and country, as urbane as is consonant with the forms and values of the city?

A glance at the palette of urban housing types will only assure us of their conventionality — and their continuing inadequacy — the multi-story flat, no more than a bigger Roman insula with water, sewer, heating and elevator, the walk-up apartments but the insula without disguise, the terrace house shorn of nobilityr This vocabulary sufficed until the city was befouled by industry, congested by traffic, despoiled by philistinism and abandoned to dereliction. These traditional housing types have been exploited since industry changed the nature of the city — and without success. No single present housing type is capable of arresting the flight to the suburbs, no single housing type offers the prospect of a new recentralization, no single present housing type offers an environment which can equal the salubrity of the suburb. Is there an urban house which, exploiting the advantages of city life, offers in addition a residential environment at least equalling the sum of advantages and disadvantages of the house in suburb or country? Can the essence of the free standing modern house be given an urban form?

Both questions can be answered in the affirmative. As supported by a number of projects during the past twenty years the court house, the introverted house facing upon one or more internal courts can provide the essence of the best free standing country houses; it can provide a residential environment as humane as it is urbane.

Moreover its range of application is surprisingly wide. Obviously it permits the creation of a new town house of great luxury and elegance but it also is adaptable to the creation of a popular town house at relatively high densities. The former house has the capacity to effect a selective recentralization — the return of the civilized to the cities, while the latter can provide for a recentralization of more significant proportions by providing a milieu for family life within the city.

The claims made for the court house concept are not puny, yet in the following pages can be seen their substantiation in a number of precursory projects. These are from distinguished architects in several countries. The unanimity of their concern for this concept and their projects within its formal expression deserve a generic title — the court house concept — and an analysis of the essential quality, the range of application, the advantages and disadvantages of this concept of urban housing.

The Essential Quality of the Court House

The court house is overwhelmingly distinguished by its introversion; the house turns its back to the street and faces upon a private, internal court or courts. The historical derivation from the peristyle and atrium of Rome and Greece, the traditional Moslem house, traditional Chinese and Japanese house is patently obvious and these plans indicate the geometric possibilities within the court house concept. The rectangular house and single walled court, the "L" house with one court, the square house with a single internal space, "H" and "T" plans each with two courts, the "Y" plan with three courts, the cruciform house having four courts and finally the possibilities of asymmetrical plans with numerous courts, these plans are united by the single fact that the quality of experience is oriented to the private delectation of the occupants.

The major problem of modern housing and its most conspicuous failure lies in the distribution and design of open space. Modern architecture has produced classic models for the two extreme conditions and no intermediate solutions. On the one hand, as can be seen in the Farnsworth House by Mies van der Rohe and the New Canaan House by Philip Johnson, the free standing house is placed in an area of beautiful natural landscape where its geometric purity contrasts vividly with the organic sculpture and texture of ground and trees. On the other hand Le Corbusier has provided the alternative model of the tall slab rising free from a lush romantic landscape. But for the intermediate problems of central redevelopment, urban renewal or a New Town there are no adequate solutions. Indeed in the case of the latter it is the inadequacy of the distribution and design of open space which is the key to the failure of the New Towns. There open space, offered as a boon, is in fact a liability; it contributes neither to amenity nor society while it disrupts any attempt to create "town" and finally — it contains no art. Open space is overprovided, usable open space is all but absent and the end product is a scene of insignificant houses lost in neutral open space.

Yet we have seen historically from Ancient Greece to the 18th century that good standards of open space are not antithetical to urban architecture. The 18th century squares represent a convincing defense of this position. Certainly there are intermediate solutions to be discovered appropriate to the problems and expression of modern architecture.

It is interesting to observe that most of the problems of open space are solved integrally within the plan of the court house. Open space in courts is provided internally and disassociated from the street scene. These

courts are private and this characteristic is the most valuable aspect of open space in housing. The courts can associate with internal functions to provide a living court, dining court, bedroom court, service court, etc. and provide a value to open space absent in all other plan types. By bringing the open space inside the house the scale of the street can be determined by traffic consideration and the height of the houses rather than being an uncontrollable sum of street and external open space. Finally the individual has a proclivity and a right to self expression in the design of open space. In current housing where this is freely expressed the result is often anarchy, vulgarity or both, where, as in the New Towns, it is suppressed, a neutral mediocrity is the product. In the court house the individual has freedom for personal expression which cannot obtrude on the public.

The court in the Orient has long been given a formal expression representing the essence of nature and is so realized with the philosophical assumption that man and nature are indivisible, and that contemplation, soliloquy and calm can best occur in nature, its essence if not its image, and the court then is made to represent the essence of nature. Again the Moslem court, based upon the Moslem concept of Paradise, has a religious basis for its formal expression in the Island of the Blessed and the four rivers of paradise. The West has no comparable basis for the formal expression of courts within houses and this must yet emerge as indeed must yet emerge the philosophy for the formal expression of a modern landscape architecture. One direction of this expression may be seen in the court of the Rockefeller House in New York, designed by Philip Johnson. In this as in other projects by Johnson one sees an esthetic consonant with the main stream of modern architecture and perhaps the precursor of the modern expression of the court in the modern court house. In the Western court as in the Oriental the value of this space is not alone in its functions but rather in its evocative use of natural and inert materials to induce soliloquy, calm, and an attachment to permanent values — in a word a humane environment.

The court house requires the expenditure of perimeter wall to create internal open spaces. The courts are the product. These are justified by the intimate relationship established between indoor and outdoor spaces. Indeed the courts become rooms outdoors. This being so the degree of privacy accorded to internal rooms is the minimum necessary for the courts.

In every historical epoch save our own the inevitable residence for the cultivated and influential, the civilized, polite and urbane as persons or families was the city. Today only a determined minority persists in the central city from choice and the family has been all but banished. The majority of the urban population lives in the city only because it lacks the economic mobility to escape and perforce lives in the slums, the meanness or the sanitary order of 19th and 20th century environment. The major population movement in this century has been the flight from the city, the greater the economic mobility the further the residence from its center. The civilized, who traditionally made the city their own, the repository and the artifact of their culture, have today fled to the outermost suburbs. In Western Europe and the United States where they persist in cities they live in the reservoir of earlier historical town houses — in the Georgian and Regency squares and mews of Bloomsbury and Chelsea in London, the New Town of Edinburgh, the 17th century "Grachtenhuizen" of Amsterdam, the 15th century Palazzo Farnese, Quartiere del Rinascimento and Via Jiulia in Rome, the Marais and Isle de St. Louis in Paris, Beacon Hill, Boston, Rittenhouse Square and Society Hill, Philadelphia and Greenwich Village in New York. Such town houses are no longer appropriate as prototypes, changed mores have caused their adaptation to contemporary residential needs while they are continually pre-empted for office space. Yet no modern town house has been produced to replace the traditional 17th and 18th century town house.

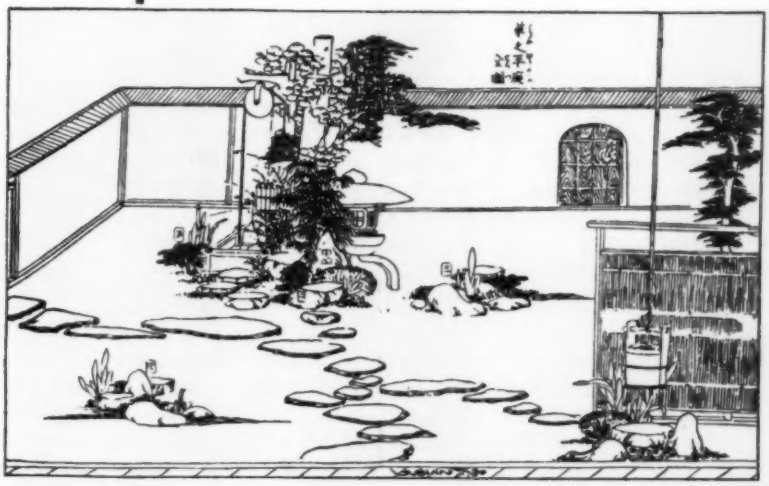
The metamorphosis necessary to create the mid-20th century city, stimulating yet humane, representing the zenith of the regional or national art, architecture, technology, social and cultural expression, this task poses many problems, but at their heart lies the necessity of returning to the city and accommodating there that segment of society most concerned with the problems of the city and best able to solve them. Not least then among the problems of the new city is the provision of a new town house. Such a house, while exploiting the existing advantages of city life must offer in addition a residential environment, at least equalling the sum of advantages and disadvantages of suburban environment. Without the introduction of such a new town house, that recentralization, which is the essence of the city's survival, cannot occur. Only by the provision of an urban residential environment at least equal in salubrity to that of the suburbs will the civilized, polite, urbane as persons and families return to the city to ensure its survival.

The court house represents such a town house, its merits are patent, they lie, not in modernity of the concept (unless modern is used as a synonym for good) but in an intrinsic excellence which its historical persistence substantiates. The court house does meet the criteria which have been advanced. It can provide a humane urban environment, an urbane architecture, a milieu for family life within the city; it does promise that recentralization which is the prerequisite to the survival of the city.

Court House Plans

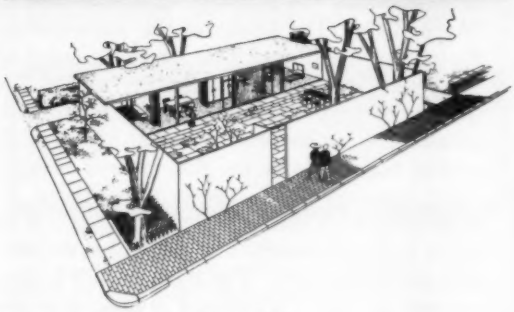
During the past five years, recurring sporadically but with increasing frequency, the court house has appeared in the architectural press. It would appear that these projects constitute a precursory movement towards widening acceptance of the court house as the new town house.

As a modern housing solution the court house concept can be loosely identified with four principal sources

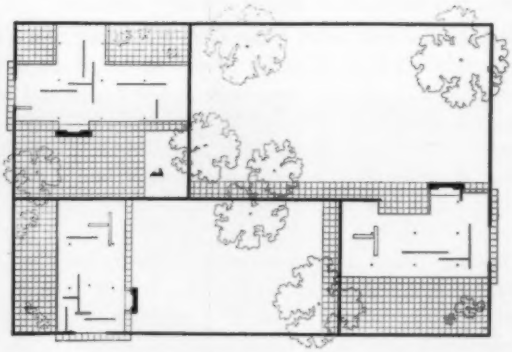


Symbolical layout for Japanese garden
(THE JAPANESE HOUSE AND GARDEN, by Tetsuro Yoshida)

George M. Cushing, Jr.



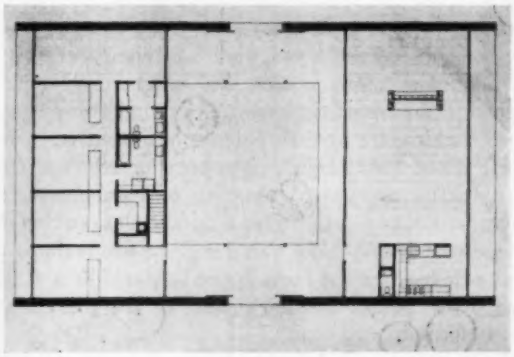
Residence, Cambridge, Mass., 1942
Philip C. Johnson, Architect



Project for group of court-houses, 1938
Mies Van Der Rohe, Architect
(MIES VAN DER ROHE, Museum of Modern Art)

Rockefeller Guest House, New York City, 1950
Philip C. Johnson, Architect

Robert M. Damora



Residence, New Canaan, Conn., 1955
Eliot Noyes, Architect

only one of which is a direct extension of an historical form. The prime source stems from Mies van der Rohe and includes L. Hilberseimer and Philip Johnson; the second group, a logical extension of its Mediterranean origins is located in Italy and, starting from the studies of Pagano, Diotallevi and Marescotti, reached fruition in the housing at Tuscolano, Rome by Adalberto Libera. The third group, also deriving from the Mediterranean is identified with José Sert, his partner Wiener and their collaborators in many projects for Latin American cities. The fourth group is a direct extension of the Moslem tradition in North Africa directed today by French architects. Each of these studies originated before or during the war. In the postwar period, and particularly during the past two or three years the court house concept has gathered many new advocates in a wide range of countries — Mexico, Britain, the United States, Denmark, Sweden, Germany and Switzerland, and consequently is now advocated for other than Mediterranean and South American locations.

Mies van der Rohe — Hilberseimer — Johnson

Perhaps the first court house from the hands of a modern architect is a study by Mies van der Rohe developed in 1931. This is essentially a row house and is so described but each house is an "L" enclosing a private open court. This concept was elaborated and in 1938 Mies developed a more complex and princely group of three court houses associated in a block, each house distinct and each having a varying number of courts. This represents in the author's opinion the zenith of court house designs. Although at a density of approximately three houses to the acre, and consequently conspicuously open for urban conditions, there can be no doubt but that such development could fulfill the vital role of proferring an urban house equalling the best conditions of a suburban environment yet additionally offering the convenience of city life. A more recent project by Mies van der Rohe, the Gratiot in Detroit, falls between the studies of 1931 and 1938. In this housing complex court houses are interposed between garden apartments and multi-story flats. With one three bedroom court house, these dwellings are conceived as middle class, family houses. The court houses are designed in groups of six, arranged around two entrance courts which are in turn entered from a covered carport. If the 1938 project represents an urban alternative to the expressive suburban or rural house, the court houses of Gratiot offer a middle class equivalent. These projects by Mies van der Rohe are perhaps the best evidence for the court house as a middle and high cost urban house. Yet the quality of the court is still not indicated.

In 1942 Philip C. Johnson, biographer and collaborator of Mies, built a simple court house in Cambridge, Massachusetts. This house did not aspire to the luxury of the court house project by Mies but, with a small and elegant structure and one private court, there was developed a conjunction of structure, space and social use impossible to achieve in such an area with a conventional plan. The court in this house remained simply as lawn, shaded by large trees, but in 1949, for the Rockefeller town house in New York, Johnson created a court with one pool, a tree, a fountain, terrace and three stepping stones. The impact of these few elements in this small space is overwhelming in contrast to the heat, fumes, noise, overpowering scale and tension of midtown Manhattan. This court, as a demonstration of the quality which can be achieved in a small urban space, is one of the most powerful exhibits as evidence of the validity of the court house concept and supplements the statements of Mies van der Rohe in which the court itself remains an enigma.

Prior to the projects of Philip Johnson, L. Hilberseimer, colleague of Mies van der Rohe at the Bauhaus and the Illinois Institute of Technology, had developed the court house concept as a form of popular housing. Utilizing the "L" shaped, single story house, he achieved densities of 120 persons or 20 houses per acre. This demonstration shows the court house as a popular housing solution applicable to central residential areas. In this Hilberseimer is supported by the historical precedents of Ancient Greece and Rome, ancient and modern North Africa and China.

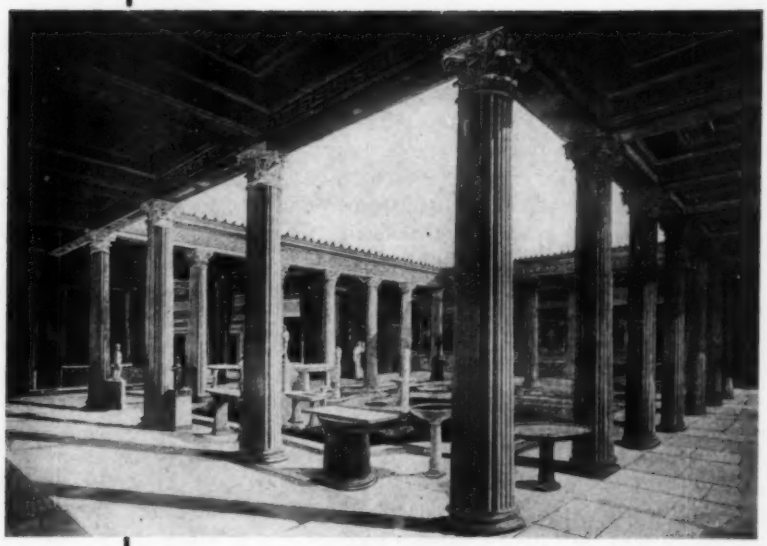
The Court House in Italy

In 1940 the Italian architects Pagano, Diotallevi and Marescotti made an extensive study on the court house concept which was published in *Construzioni Casabella* (April, 1940). The results of this examination are reflected in the writing of Eglo Benincasa today and more concretely in the housing project in the Tuscolano quarter of Rome, designed by Adalberto Libera and constructed, as low cost housing, by Ina Casa. This project appears to be the first modern example of the court house used as a popular urban house. It has an approximate net density of 30 houses per acre and, with seven beds per house, an envisaged net density of over 200 persons per acre. The repeated block plan, which consists of four "L" shaped houses, is a novel one. Three of the courts face inward while the remaining one opens to the pedestrian footpath. The courts are extremely small for the seven occupants of each house but this is in part compensated by common open space provided in the development.

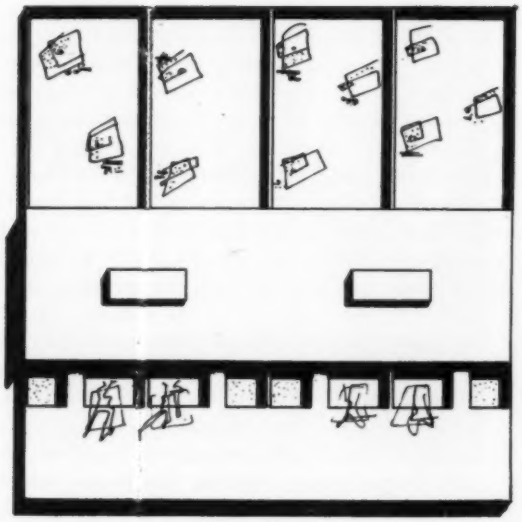
The appropriateness of the court house concept to the Mediterranean would seem evident. Its appropriateness as a more general solution is indicated by Eglo Benincasa in *L'Architettura:* "Foreigners admire the 'picturesqueness' of the south, but underlying it there is a livability which the modern architect overlooks in popular housing. . . . The sheltered space constitutes a challenge to modern architecture. It is a free creation linking the house to nature."

The Court House in South and Central America

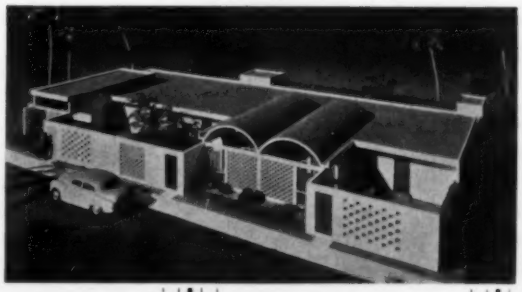
The third line of court house development is represented by José Sert, his partner Wiener and certain Mexican architects, notably Victor de la Lama. Sert, a Spaniard,

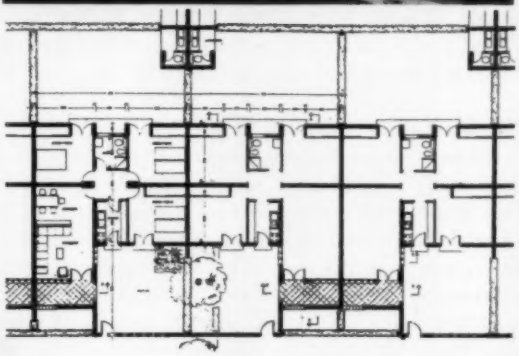


The Vetti House, Pompeii
(The Bettman Archive)



Group of four medium-priced units in Mexico
Guillermo Rossell & Lorenzo Carrasco, Architects
(MEXICO'S MODERN ARCHITECTURE, by I. E. Myers)





Row houses under construction in Cuba
Paul Lester Wiener and Jose Luis Sert, Architects

Residence in Mexico
Victor de la Lama, Architect
(MEXICO'S MODERN ARCHITECTURE, by I. E. Myers)

has adapted the Moslem heritage of the court house to his native land and made this the prototype popular house in his planning and housing studies for Central and South America. In the context of Latin America with a high sun angle, high temperatures and the Latin demand for privacy and protection the court house, its tradition, remains the most valid housing solution. In the hands of Sert and his collaborators the court house also represents an admirable means of ameliorating the micro-climate, a resource inherent in the plan but more vital in high temperature locales. Wiener and Sert are particularly distinguished by their long established attachment to this concept and by the skill with which they have utilized it as the basis for larger planning scales — nucleus, neighborhood and town. Indeed the distinctive contribution of these architects is that they have created a humane city in which the court house concept is the unifying element, appropriate to the climate, technology, art and mores of South America.

The typical court house plan utilized by Wiener and Sert is the "L" house with a service court cut from the exterior angle. This house is associated in groups of four to form a rectangle with the living courts located internally.

This attitude to orientation, acceptable in low latitudes, makes such a juxtaposition possible whereas it might well be questioned for other climates.

Whereas Wiener and Sert have utilized the court house as a low cost popular house, its exploitation in Mexico has been on a more lavish scale. The projects of Victor de la Lama particularly show the court house in terms analogous to the Mies van der Rohe 1938 court house. Each house contains a number of courts with swimming pools and lush sub-tropical vegetation. These demonstrate a standard of environment, albeit for a climate distinct from either Western Europe or the United States, which compares favorably with the free standing suburban or rural house.

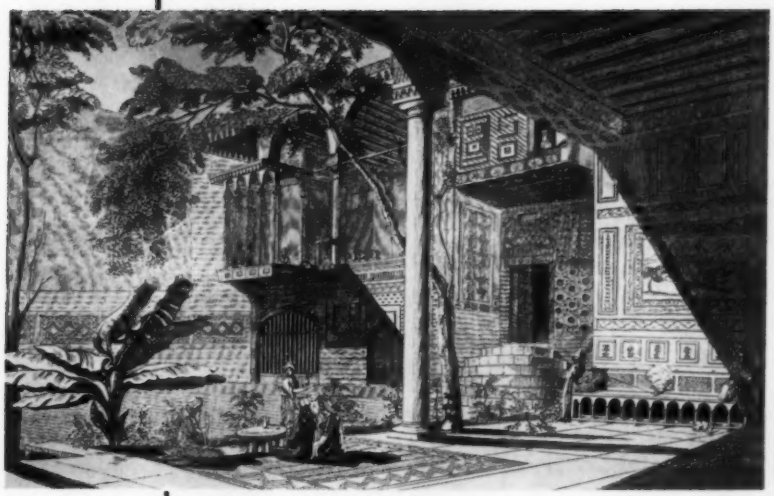
The Court House in North Africa

In the western hemisphere the court house has persisted as a continuous concept only in the Moslem world. This housing type constitutes a vernacular form but it has also been utilized and exploited by modern architects as a contemporory solution. Numerous French architects, practicing in North Africa have used the court house as the prototype for Moslem housing projects. These developments are generally low cost with minimal standards; indeed it is apparent that while normally bedrooms, kitchen and bathroom are provided in the house, the living room, the only living space, is the open court. The court house concept in the hands of the architect J. Delaroziere has been used not only as a house plan but as the basis for a neighborhood plan with a hierarchy of open spaces extending from the private court to larger open spaces shared by nuclei to the final open space shared by the entire community (*L'Architecture D'Aujourd'hui* No. 60, 1955. p. 37).

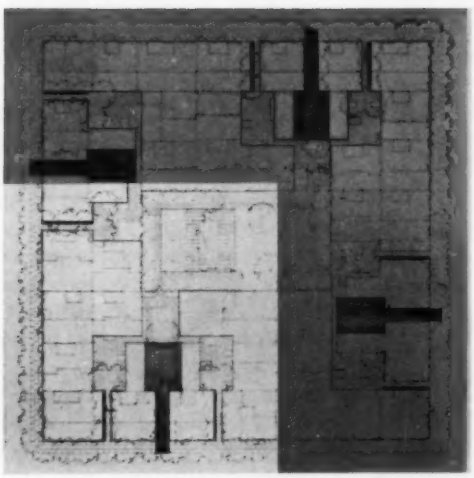
Recent Court Houses

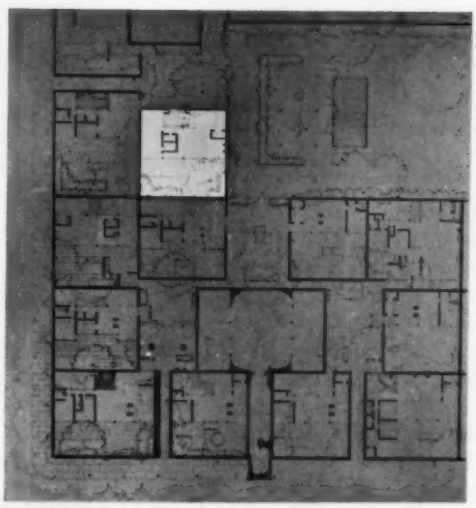
Developing from the court houses of these four groups are a large number of recent projects from a wide range of countries. From a Mediterranean and Hispano-American base the concept has entered throughout Europe and penetrated North America. Almost all the major European countries are represented in court house projects and this housing type has been advanced for countries as distant from the Mediterranean as Denmark. These projects include "L" shaped court houses by Custer, Escher, Gisel and Weilenmann proposed as an extension to the Neubuhl in Zürich (*Bauen and Wohnen* 10, pp. 22 and 23), the "atrium house" by George Schwindowski of Berlin (*Bauen and Wohnen* Jan., 1956, pp. 35 and 36), studies by Eske Kristensen (*Arkitecter*), and John Utzon (*Architects Year Book #6*) in Scandinavia, projects by Netherland students (*Forum*, Netherlands), the Smithson house for the Ideal Homes Exhibition 1956 (*Architectural Design*, March 1956, pp. 101 and 102) with which a written explanation reads "all rainwater is collected and runs through a gargoyle to a container in the internal garden!" These projects, while amenable for use in urban situations are not so proposed. In contrast, a project by the architects Chamberlin, Powell and Bon (*Architectural Design*, Oct., 1956, p. 327), utilizing the court house concept aims at central urban locations and high densities. This solution, with an average height of one and a half stories provides a net density of 160 persons or about 30 houses per acre. The aim to maximize the applicability of the court house by maximizing density is laudable and the solution is extraordinarily ingenious. Particularly noteworthy is the success achieved in either eliminating or minimizing the degree of overlooking into private courts while employing a two story bedroom unit. Yet there is some reason to believe that the density may be excessively high for this house type and that with the low sun angle of Britain the courts might well become insalubrious holes. Further, where the courts are so small it would appear vital to provide a secondary area of open space which this proposal fails to grant. With the private court provided for the family, yet another area should exist as focus and venue for social intercourse in the community. Yet this is perhaps the best example to date of the court house as a popular urban house. Densities of 160 persons per acre or even 100 persons to the acre, supplemented by tall buildings can, as the architects indicate, provide densities perfectly compatible with urban land values and building values.

Beyond the Mediterranean and Latin America, it is in the United States that the court house concept has taken the strongest hold. This is assuredly not unconnected with the presence of Mies van der Rohe, Philip Johnson and L. Hilberseimer and their attachment to this concept. It may well also be influenced by the existence of a Hispano-American tradition in California and the southwestern United States. The preoccupation with the court house is evident but remains to date in the project phase. In addition to those architects

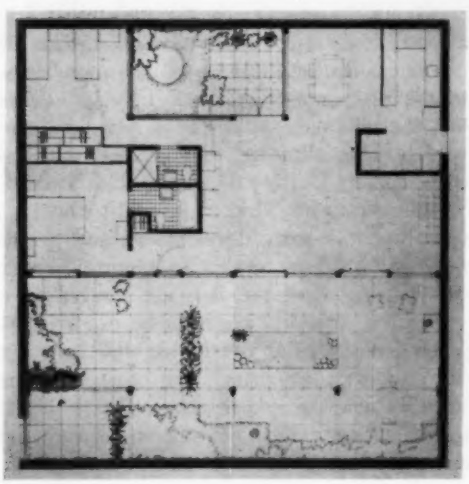


Old residence, Cairo
(The Bettman Archive)





Court house study made at University of Pennsylvania for central Philadelphia block: site plan, left above; quadrant plan, above; typical unit plan, left



mentioned above, Serge Chermayeff, Oskar Stonorov, Ralph Rapson, Donald Olsen and Morse Payne have all produced court houses or court house complexes. Donald Olsen has designed a swastika house with four courts (*Arts and Architecture*, April, 1948); that by Ralph Rapson has a single internal court (*Interiors*, September, 1948, p. 119).

The project by Morse Payne (*Interiors*, January, 1956, pp. 69–71) exploits the court house concept in a distinct way. The lot is a long rectangle which is divided into three or four courts — by the interposition of building volumes, usually two or three in number — the living-dining-kitchen volume, the bedroom volume or the bedroom function divided into the master bedroom volume and the children-guest bedroom volume. By raising certain of these volumes the entire space can be continuous or divided into distinct courts associated with specific functions. This plan might well be described as the in-line court house and represents an admirable addition to the vocabulary. The density is approximately 15 houses or 90 habitable rooms per acre.

Serge Chermayeff, Oskar Stonorov and Mies van der Rohe have during the past year developed not only court houses but associated these in small groups. In the study which Chermayeff has conducted with students of the Harvard Graduate School of Design, the house, with a "U" plan has three courts — two external and one internal. This prototype house is associated in groups of six, but could be exploited as a row house. Before Mies van der Rohe designed his Gratiot project Stonorov prepared a scheme for this development in which he utilized court houses. This project aims for a higher net density for the court houses than does the subsequent scheme by Mies van der Rohe. To achieve this, two story quatrefoil court houses were developed. Given the absolute necessity of building two story structures this design is admirable, but it must be observed that all courts suffer from overlooking and the value of the court is depreciated.

The court house as a house plan has been thoroughly demonstrated and in the projects by Mies van der Rohe, Stonorov and Chermayeff can be seen small nuclei made with four to six court houses. In Gratiot by Mies the group of houses depend upon a single car court and each trio of houses share a common entrance court. However, save in the single project of Adalberto Libera in Rome there is no evidence of the court house as an element in a community. Towards the end of exploiting the court house as an element in the small urban community, graduate students of the University of Pennsylvania under the direction of the author, made studies for a central Philadelphia city block site.

In this study the intention was not only to exploit the court house but to create a community which would be as salubrious at the community level as would be the court house at the dwelling level. The program required houses from 1500 to 3000 sq ft with provision for one car per house. To create the court house community it was required, as in the subsequent Gratiot projects, that groups of six to ten court houses depend upon one common court acting as forecourt and that beyond that a central open space with small playground, swimming pool be provided as the venue for social intercourse in the block. The net density averaged twenty houses per acre, the gross density within the block was half that figure.

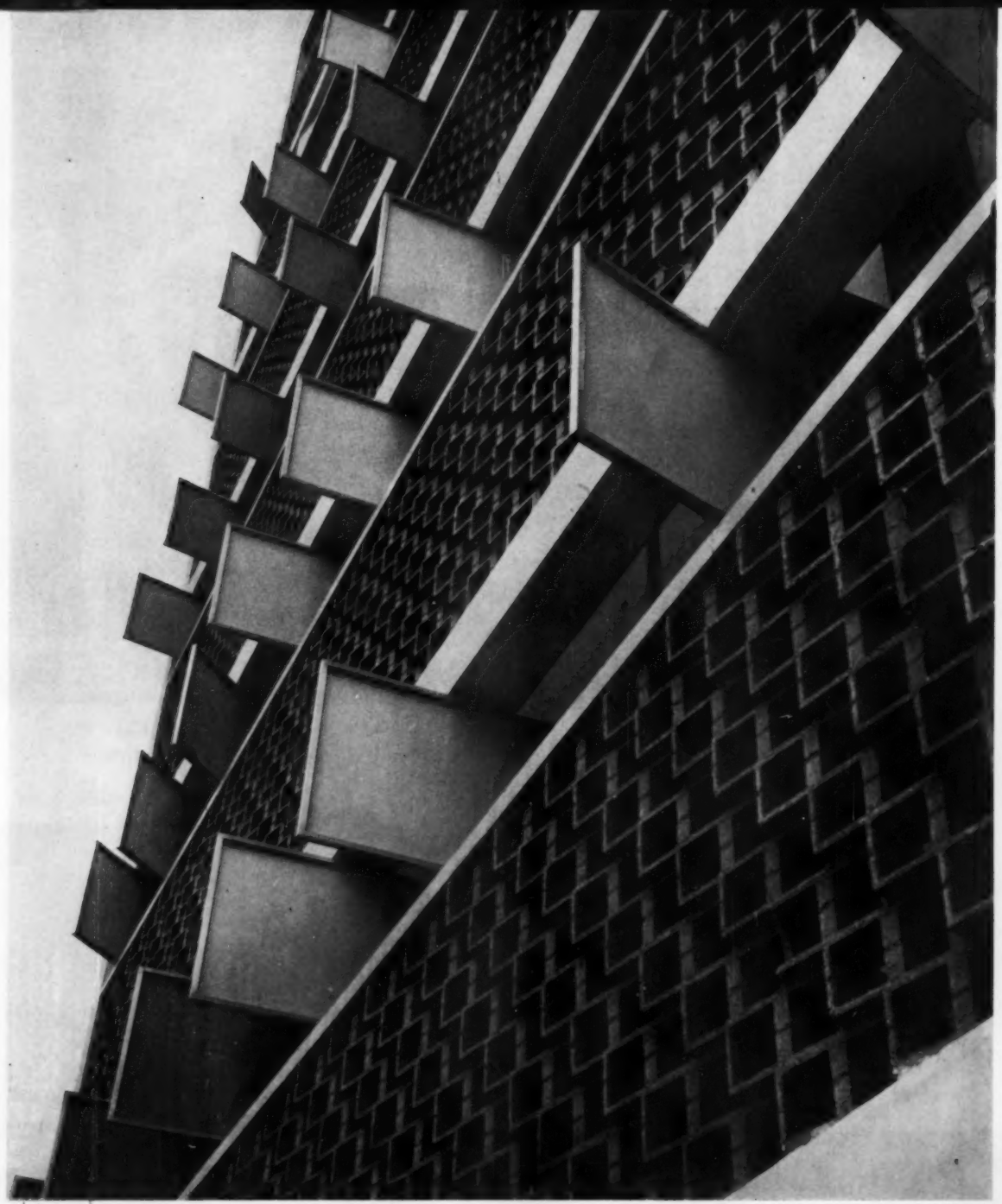
It is submitted that this final stage of utilizing the court houses around a sequence of open space as venue for social life constitutes an advance in the exploitation of the court house, that it does present an environment as urbane as it is humane, consonant with the forms and values of the city. The author, in collaboration with Philip Johnson, is in the process of designing such a project in central Philadelphia.

Conclusion

The housing solutions which have been advanced or utilized in this century fall into three main categories; the two extremes of the multi-story flat and the free standing, single family house and, between these, the terrace-row semi-detached house. The multi-story flat has particularly been espoused by the leaders of modern architecture. From Le Voisin, La Ville Radieuse, The Siemensstadt, "De Plaslaon" in Rotterdam and their derivatives to the Unités d' Habitation, modern architecture had advanced the multi-story apartment as the prime urban house type. Yet it hardly justifies this devotion and dependence on the grounds of its modernity. Some reaction to this preoccupation and devotion to the flat has appeared within C.I.A.M., founder and prime protagonist of modern vertical living. At C.I.A.M. 10 the English members W. and G. Howell, J. A. Patridge states that "Even if and when we have built up a successful tradition and practice of multi-level living, which we are very far from having done — we feel that — there will always be a demand for a considerable proportion of (town) houses. And if the program demands it we must find ways of using them as elements in the city" (*Architectural Design*).

Although having a recurring role for two thousand years, the multi-story apartment has not built a successful tradition; it has found only limited acceptance and far from offering the key to a new and selective recentralization, is unable to arrest decentralization.

The realization must be all the more disheartening to the protagonists of vertical living in view of the fact that the concept has been advanced during a severe housing shortage when choice was severely restricted. The Unités, Barbican, High Paddington, the Smithson concept, Gratiot all point towards improvement in multi-story development and the tall apartment will continue to play an important role in central city housing. However, it is not a sovereign cure. The vocabulary urgently needs to be expanded; the court house constitutes an invaluable addition to the vocabulary of central housing. The court house can return the civilized, the urbane and polite to the cities, offer the milieu for family life within the city and provide an environment as urbane as it is delightful.

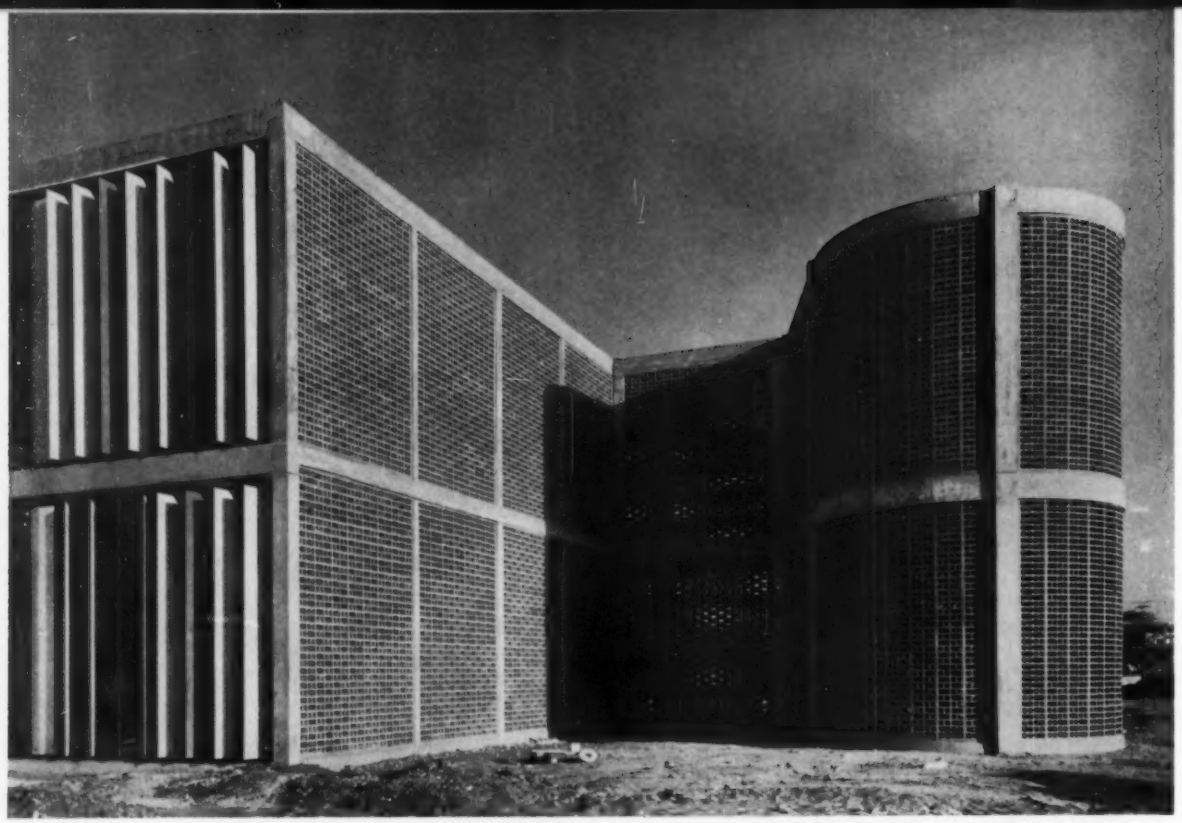


Paolo Gasparin

Sun Screens on office Building, Caracas. Carlos Guinand and Moises Benacerraf, Architects

HIGHLIGHTS OF VENEZUELA'S BURGEONING NEW ARCHITECTURE

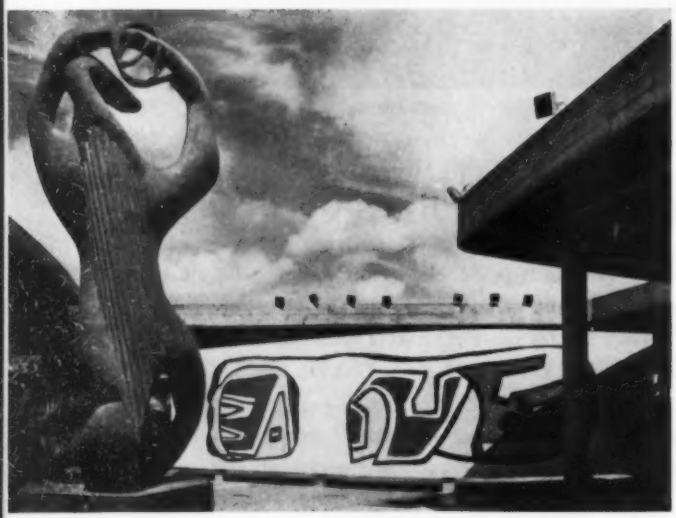
The following pages sample a sparkling exhibit of Venezuela's current and enormous building boom on view August 21 to September 15 at New York's World Affairs Center Exhibit Hall. It will then show for two months at the Pan American Union, Washington, D. C., and tour U. S. Architectural Schools. Sponsors are the Venezuelan Society of Architects and the Creole Petroleum Corp. It was prepared by Cipriano Dominguez, Luis Ramirez, Paolo Gasparini and Mateo Manaure.



Paolo Gasparini

School of Petroleum Engineering, Univ. of Zulia, Maracaibo. C. R. Villanueva, Architect

School of Architecture, University City, Caracas, 1957. Carlos Raul Villanueva, Architect

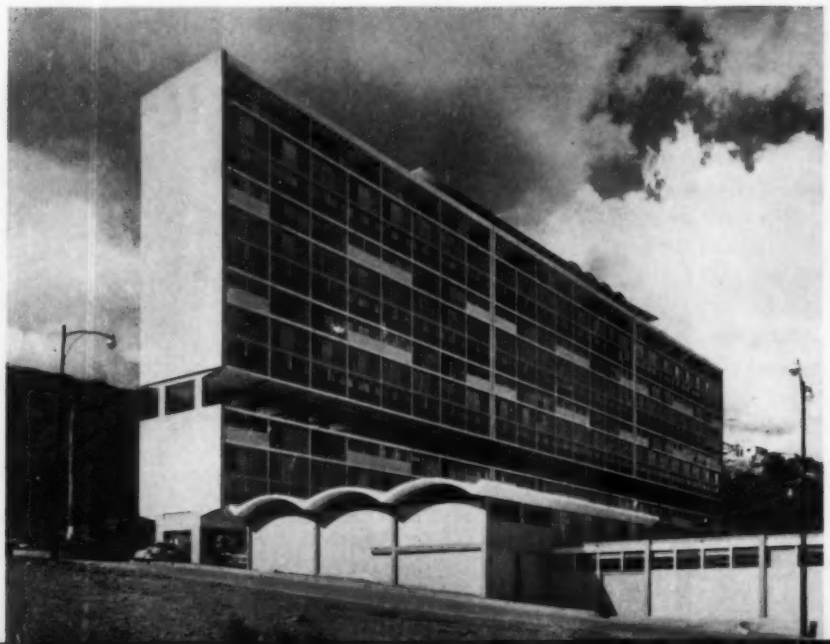


University City, Caracas, begun in 1942. Sculpture by Henri Laurens, mural by Fernand Léger. Carlos Raul Villanueva, Architect

Pavilion designed for international exposition, Santo Domingo, Dominican Republic, 1955. Alejandro Pietri Pietri, Architect

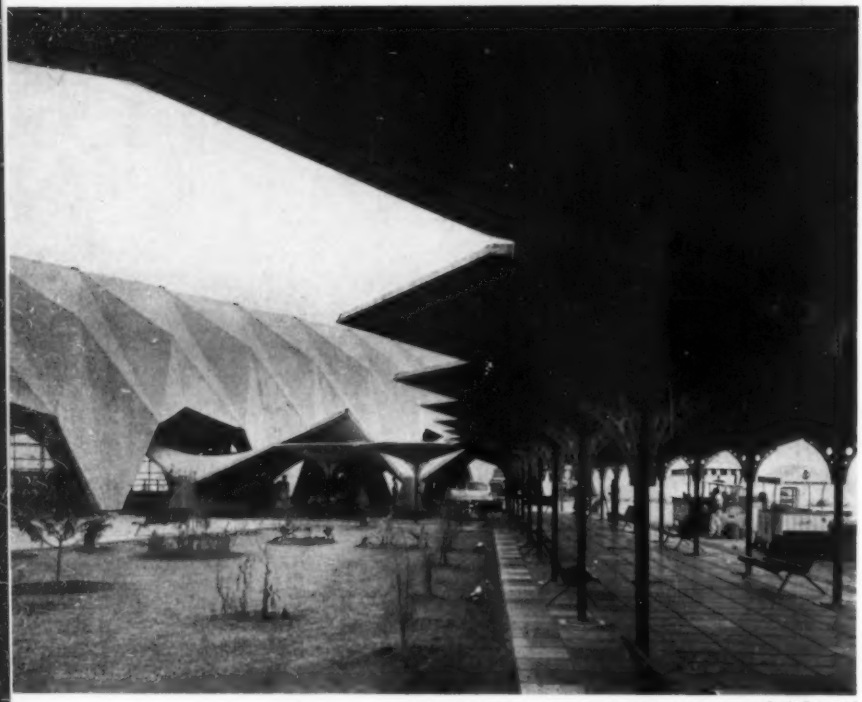
"2 de Diciembre" Housing Development of the Banco Obrero, Caracas, 1956–57. Carlos Raul Villanueva, Jose Manuel Mijares, Jose Hoffman, and Carlos A. Brando, Architects

Cerro Grande Housing Unit, Caracas, 1954. Guido Bermúdez, Architect



Hotel Alto Llano, Barinas, 1956. Oscar Carpio and Guillermo A. Suarez, in collaboration with Ramon Burgos, Architects

Mariperez Cable Terminal, Caracas, 1955–56. Alejandro Pietri Pietri, Architect



Paolo Gasparini

Hotel Prado del Rio, Merida, 1957. Tomas Jose Sanabria and Julio C. Volante, Architects

Shopping

CAN BE A PLEASURE

SUBURBAN SHOPPING *can be* a pleasant experience, but seldom is. Great numbers of shopping centers, large and small, are being built across the country, but the unhappy truth is that the overwhelming majority of them are neither good to look at nor a real pleasure to use. The American genius for turning a profit seems, in suburbia, to be wedded to a distressing penchant for bringing merchandising blight to the land as part of the process. In terms of logic, convenience, or visual delight, the typical shopping center offers little. Occasional exceptions, such as the centers presented here, demonstrate by contrast the validity of this judgment. Suburban shopping *can be* a pleasure.

There have been good results from the large amount of study devoted to the location, planning and servicing of retail stores; and to their grouping into a smoothly functioning center that performs as a profitable mechanism for sales. But there has been far less accomplishment in the design of the spaces between and around these stores; their parking areas; the relationship of such centers to the highway and community; in brief — the *shopping environment*. This is the aspect of shopping center design that can make the difference — and the creation of a delightful shopping environment for the stores is specifically an architectural obligation. Further, only when many more owners appreciate the role of such an environment and the unique role of the architect in achieving it can large numbers of shopping areas benefit in both financial and human terms.

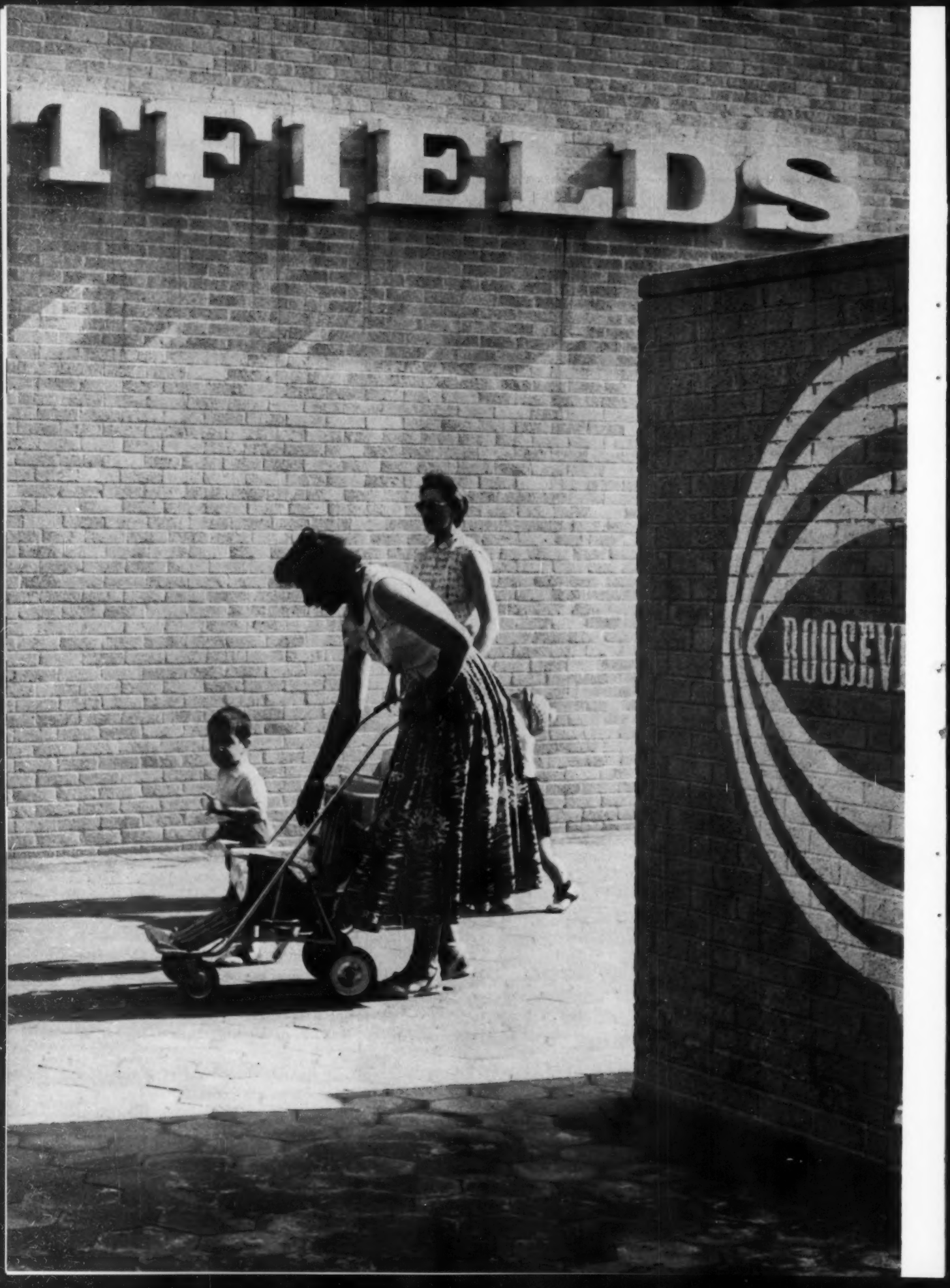
An attractive center that people enjoy visiting will make a larger profit in today's economy and will survive when others fail in a still more competitive economic climate. Smart business men value friendly human relationships and community respect; Marshall Field & Co. is pleased indeed that many people come to Old Orchard (pp 220–228) on Sundays — when all the stores are closed — simply because it's a pleasant place to be. This is good business.

When one visits any shopping center, he engages in certain distinct phases of an essentially circulatory activity. First, he must gain access, drive in and park. Second, he must move from his car to the store group and then to his first shopping stop. Next, he must move from that store to others. Finally, he must return to his car. This process occurs in three physical areas: the access and parking area; the parking-to-store belt; and the malls, walks, courts, etc. between and connecting the stores. It is with the sizes, shapes, surfaces, and dispositions of these three that the architect must be concerned if he is to create the captivating atmosphere that will draw people back to the center again.

In this study we have narrowed our attention to this aspect of the total problem of shopping center design. We present three centers; one large, one medium in size, one small. Each of these makes a significant contribution in the direction of a delightful climate for suburban shopping.

— JAMES S. HORNBECK

Shopping Centers : BUILDING TYPES STUDY 250 ®


TFIELDS
ROOSEV

IT'S FUN TO VISIT AMERICA'S LARGEST SHOPPING CENTER

There is interesting variety within a skillfully organized, dominant architectural pattern at Roosevelt Field. There is an assuring, human scale everywhere — not easy in the world's largest center; there is visual intrigue and delight — changing, colorful, but always under control; and there is an ordered, easy-to-learn traffic flow for pedestrian and driver. In short — it's fun to shop here.

Architect I. M. Pei says, "The site plan is essentially a free-flowing ring road surrounding a central building group. The stores form a compact cluster, minimizing walking distances and heightening cumulative drawing power. The relatively narrow malls encourage cross shopping, double the presentation of merchandise, and heighten the impression of activity. The shopper's route leads him through streets of different widths and varying architectural treatments, affording a variety of experiences. Trees, flowers, music, fountains, gay awnings, and bold use of graphic art combine to make the retail atmosphere. Variety of store front design along malls was encouraged.

"Store fronts facing parking areas are designed by the center architect to give the impression of a planned center, yet provide tenant identification. A modular system of dark-brown steel frames, rough-faced off-white brick and glass was used. Within this system, each store was given individual treatment."

Throughout, the structural module is 26 by 32 ft, with the basic 26-ft store front dimension subdivided into 4 parts. Basic heights: inner stores 12 ft; outer stores 16 ft; doors 7 ft. Sign sizes, colors and materials are rigidly controlled.

1—Two variety stores and lower priced-apparel stores, 2—Specialty shops, 3—Quality stores, mainly apparel, 4—Hard goods, housewares, 5—Macy's, 6—Supermarkets 7—Outdoor skating rink.

ROOSEVELT FIELD SHOPPING CENTER
Nassau County, Long Island
A Webb & Knapp Project

Architects: I. M. Pei & Associates. Project Staff: O. Aftreth, A. P. Moore, J. LoPinto, A. Candido. Graphics Head: Don Page. Associate Architect: R. C. Brugnoni. General Contractor: George A. Fuller Co.

Consultants: Structural, Severud-Elstad-Krueger; Mechanical, Syska & Hennessy; Special Lighting, H. Abe Feder; Landscape, Robert Zion; Traffic Engineers: Wilbur Smith

Photo, left page, by © Ezra Stoller

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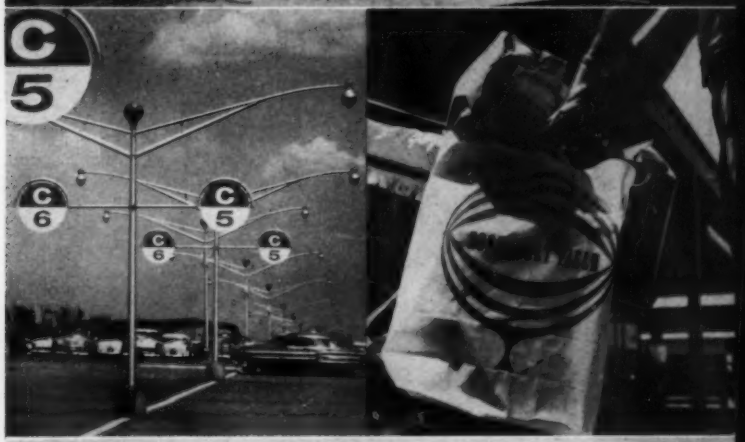

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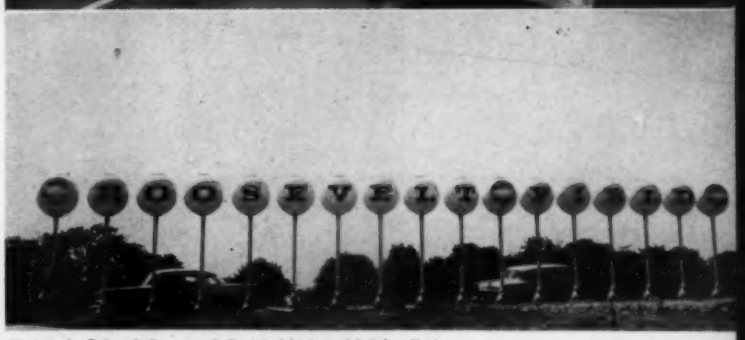

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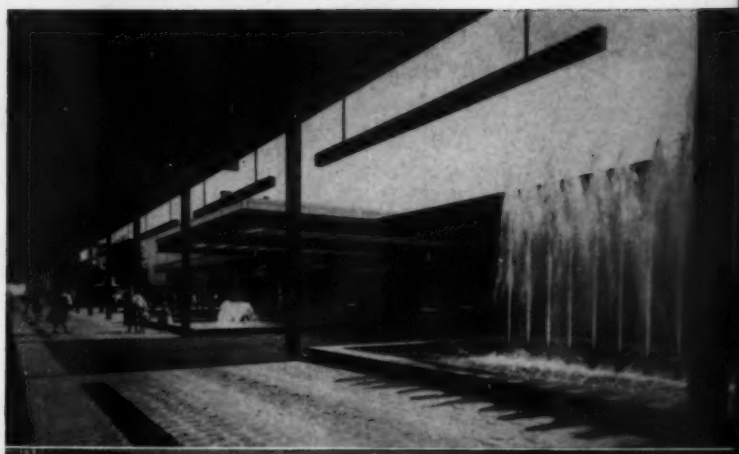
ROOSEVELT FIELD:

The Flight Mall, **left page,** extends from Macy's store north to the skating rink. The multi-colored flags were designed by Kenneth Resen, of I. M. Pei's graphics department.

The bus terminal, **1 & 2,** is attractively sheltered by wire glass panels in aluminum extrusion surrounds held by the dark brown steel framework. The architect's graphics men designed the parking identifiers in varying gay colors, **3;** the shopping bag, **4,** with orange balloon, black letters; and the entrance sign, **5,** consisting of 40-in. white plastic globes, inside lighted and with black letters. The 4-in. aluminum tube supports — just erected — will soon have their bases hidden by spreading plants.



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ROOSEVELT FIELD:

The Fountain Mall — shown variously in **6, 7, 8,** and on the **left page** — features two types of fountains along its length; the squatty mushroom and the row of high jets. All fountains in the center use a total of 2200 gal. of water per minute, 25 per cent of which passes through diatomaceous filters to be recirculated. In winter, the water is tempered by special heating units. Before final installation, various experimental setups were made in order to study nozzle sizes and flow patterns. For nighttime use there are amber, blue and green underwater lights, controlled by rheostat. The tanks are welded steel construction, painted blue; the curbings are of stone.

cy's
HOUSTON

9

10

ROOSEVELT FIELD:

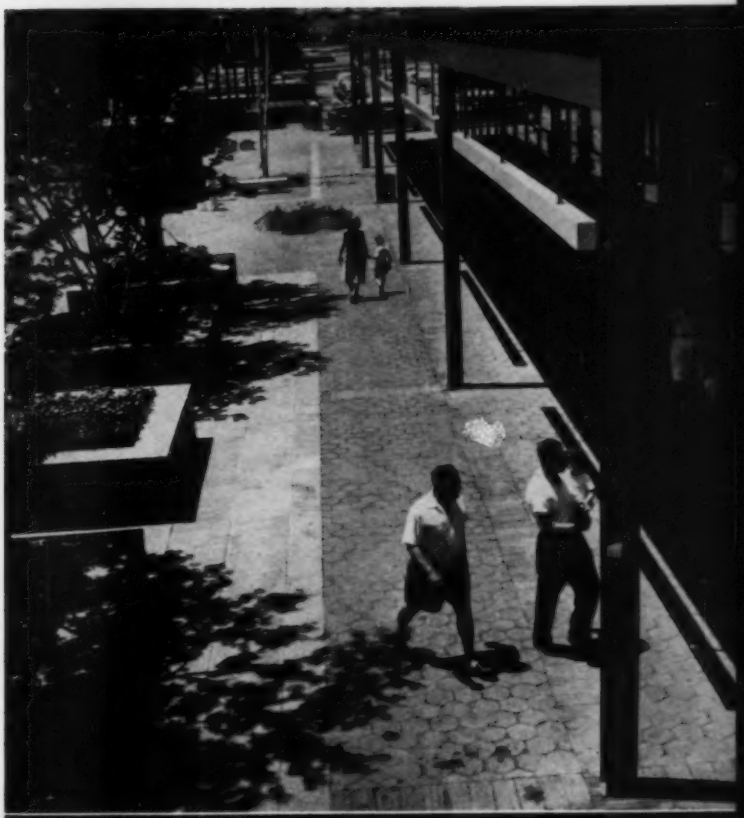
Macy's largest suburban branch, designed by Skidmore, Owings & Merrill, is seen, **10,** through a pattern of weeping cherry trees; and **left page,** flanking the west mall with a typical kiosk in the foreground.

Ten kiosks spotted about the center, **9,** impart a delightful continental touch, and are — or have been — in use for key-makers, pretzel vendors, benefits, Air Force recruiting, and even for automobile insurance!

Electric stairways, **11,** lead to the lower level concourse, where there are 25 additional shops, rest rooms, center administrative offices, a radio broadcasting studio, a 400-seat meeting room for community use, a home building products display center and an art center.

11

All photos by © Ezra Stoller



12

13

14

All photos by © Ezra Stoller

ROOSEVELT FIELD:

Typical of all the malls, the Plaza, **left page** and **12,** is paved with sound reducing 9-in. hexagonal asphalt blocks, ground to expose the bluestone aggregate. They serve as the field between divider strips of stone in a modular pattern that aligns with the modular pattern of the buildings.

The Continental Court, **13,** features a fountain with granite curb-bench and restful classical music from hidden sources.

The outdoor skating rink, **14,** is now being built and will open this winter.

There is a pick-up area for each of the supermarkets, page 216, following. The lettering is in primaries, black and white. The curved bench, variously used throughout the center, is precast concrete.

PICK UP AREA

Random Observations on Shopping Centers

AND PLANNING FOR PEDESTRIANS

BY RICHARD M. BENNETT, Architect*

SHOPPING IS DEFINED as "looking at, pricing, or buying merchandise displayed for sale."

While the success of a shopping center is measured by the magnitude of the buying therein, one must not forget that — varying with the type of merchandise — the *looking at* and the *pricing* are the foundation of the *buying* act.

Foodstuffs, laundry items and other standard things used every day — widely advertised and with narrow price variations — can be sold in a Buying Center. Here, the main design problem is easy and convenient access to demand merchandise — essential items which *must* be bought periodically. Once attracted, the captive buyer can then be exposed to impulse items which, when *looked at*, are often purchased, if the *pricing* is attractive.

On the other hand "Big Ticket" merchandise (more expensive and important) demands different handling, and here is the real difference between a Shopping Center and a Buying Center; for being bigger is only one factor. A Shopping Center is a place where one goes to seek, to look at, to find, compare, price and buy, and the implication of the adventure of finding is an important ingredient.

On Shopping Itself

Looked at in broader terms, Shopping is a Social Ritual. The wife and homemaker charged with the wise spending of the family income must be given the sense that she has *worked* at seeking out and discovering a uniquely right article at a justifiable price.

It is not enough to have important purchases merely available. They must be as available as possible but in an atmosphere that suggests the culmination of a quest.

A Shopping Center can, and should have a number of terminal atmospheres. For example, one appliance selling area could be bright, overwhelming in range of stock and suggesting that things must be cheap because there are so many of them. Another location could display the same products with different lighting and greater spacing so that quality is stressed and the uniquenesses and features of products emphasized.

Above all, the opportunity must be given to *compare*. What can one get for a little more — or a little less money? Does one want the red one — or should one take the sensible black one? What does the other store have — how does it differ?

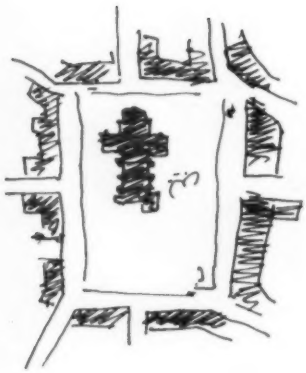
The larger shopping center is relatively more successful today because it can offer a deeper selection of merchandise at a wider range of prices than is possible in a smaller center.

Actually, shopping centers are not an entirely new phenomenon. A glance backward in history and some off-beat observations at other less recognized

* Who also made these delightfully spontaneous sketches in the margins of a rough draft, with no idea they would be published. (Ed.)

merchandising arrangements might be stimulating in evaluating the present — and in looking ahead.

Village Plans



Thomas Sharp, the English Town Planner, tracing the development of the English Village through obvious crossroad, ferry and Roman legionary camp origins, failed to discover a village along a simple, straight road. Surprisingly, though, there *are* villages established along curved roads when the curvature is such that one cannot look *through* the settlement.

Towns built around open squares, often stemming from the Roman occupation, are interesting in that very often the advent of Christianity found the church built in a corner or end of the open space so that it terminated the principal streets leading to the square. Perhaps more importantly the church or cathedral site prevented views *out* of the square. There is evidence, too, that other streets leading outward were allowed to bend and curve so as not to invite one to leave the center. For the merchants with shops ringing the square, the church obviously blocks a number of views towards their individual establishments, but this is more than offset by the fact that when one is near their shops there is less distraction from other stores. The attention of potential customers tends to be concentrated upon the nearest shops.

Amusement Parks

Though a neglected chapter in architectural history, amusement parks are excellent merchandising complexes because most people spend more than they intend in these ingenious layouts. The typical arrangement seems to be a meandering closed ring which returns on itself so that one starts a second circuit before one realizes it. While at first glance the informal layout may appear "Parklike" in character, the looking-around-a-corner process lures one forward and — at the same time — by shortening and limiting the view, as in many villages, concentrates one's attention upon the attractions most nearly at hand.

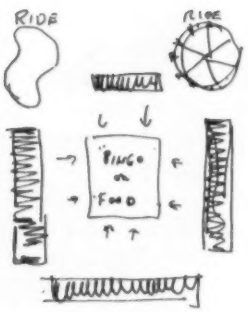
In pondering about the principles behind such plans, Coney Island, remembered as stretching straight along a beach, seemed to be a disconcerting exception. It is, of course, one of the most famous and successful of all amusement centers.

A trip there to check shows that it is not in reality built along a straight line, but is a great curved walk skirting a bay. As one promenades, the vista directly ahead is always dominated by shops and views into attractions.

One cannot help wonder what would have happened if the beach had been built on an outside curve around a headland instead of along a bay.

The famous Atlantic City boardwalk follows the same merchandising principles as Coney Island.

Carnivals



Much as amusement parks, carnivals are high-powered merchandising endeavors. Since they are assembled every week or so at different locations with changing components, they have a flexibility of arrangement that is responsive to practical experience. Conversations with carnival operators indicate that they are usually set up following the same principles as amusement parks, with a central attraction ringed by booths and secondary attractions including the "rides" in the corners. The central feature is such that it can be approached from all sides, and varies from a Bingo Tent to some sort of food concession.

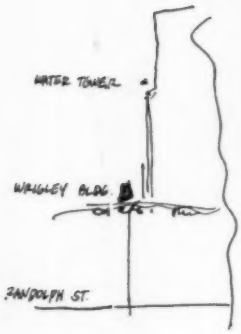
Department Stores

The highly developed interior planning of department stores may seem haphazard at first glance but the change of pace, space and direction — the informal arrangement — represents hard-headed thinking and experience. If certain principles work within the store, then they must have application to the

spaces *between* buildings if the shopping adventure is to be a unified, total experience.

Streets—The Limited View

Could it be that most great shopping streets curve, bend, are short, or somehow establish limited views? For example, the Rue de Rivoli is straight but the massive piers of the enclosing arcade minimize the distraction of street traffic and the neighboring park.

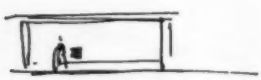


One of the most entrancing and pleasant of shopping streets is Copenhagen's Stroget. Narrow and charming, it changes its name as it bends; opens occasionally into a square; presents a succession of visual changes. As one succumbs to the adventure, there is never a vista too far for understanding, and one finds himself hoping the street will never end.

Fifth Avenue in New York is a most famous shopping street — yet it is straight and it is successful — but is it? Actually, it has hardly settled down and has been travelling uptown these many years seeking a fixed point; some stabilizing element. Maybe the cross-axis at Radio City and the end-of-the-line at Central Park will stop its travel. We should realize that its success as a shopping area is probably based on the presence of many people who are there for a purpose other than shopping — such as business or sight-seeing. Our new regional shopping centers must, by the nature of their situation, create their own attraction.

Then there are streets with limited views and the smell of adventure which are not great successes as shopping streets — as yet. For example, Chicago's North Michigan Avenue is a highly attractive thorofare, especially when contrasted to its southern extension. Looking north from Randolph Street one's view is blocked by the Wrigley Building. Arriving near it and the Chicago River one jogs a little east and again the view is blocked, this time by the Old Water Tower. Again, jogging past that, the street stretches on until it opens into the lakefront. Its fascination is such that a walk along it is never tiring and one is apt to follow it further than he intended. Its potential as a shopping street is unrealized because of unused sites and lack of concentration.

Scale



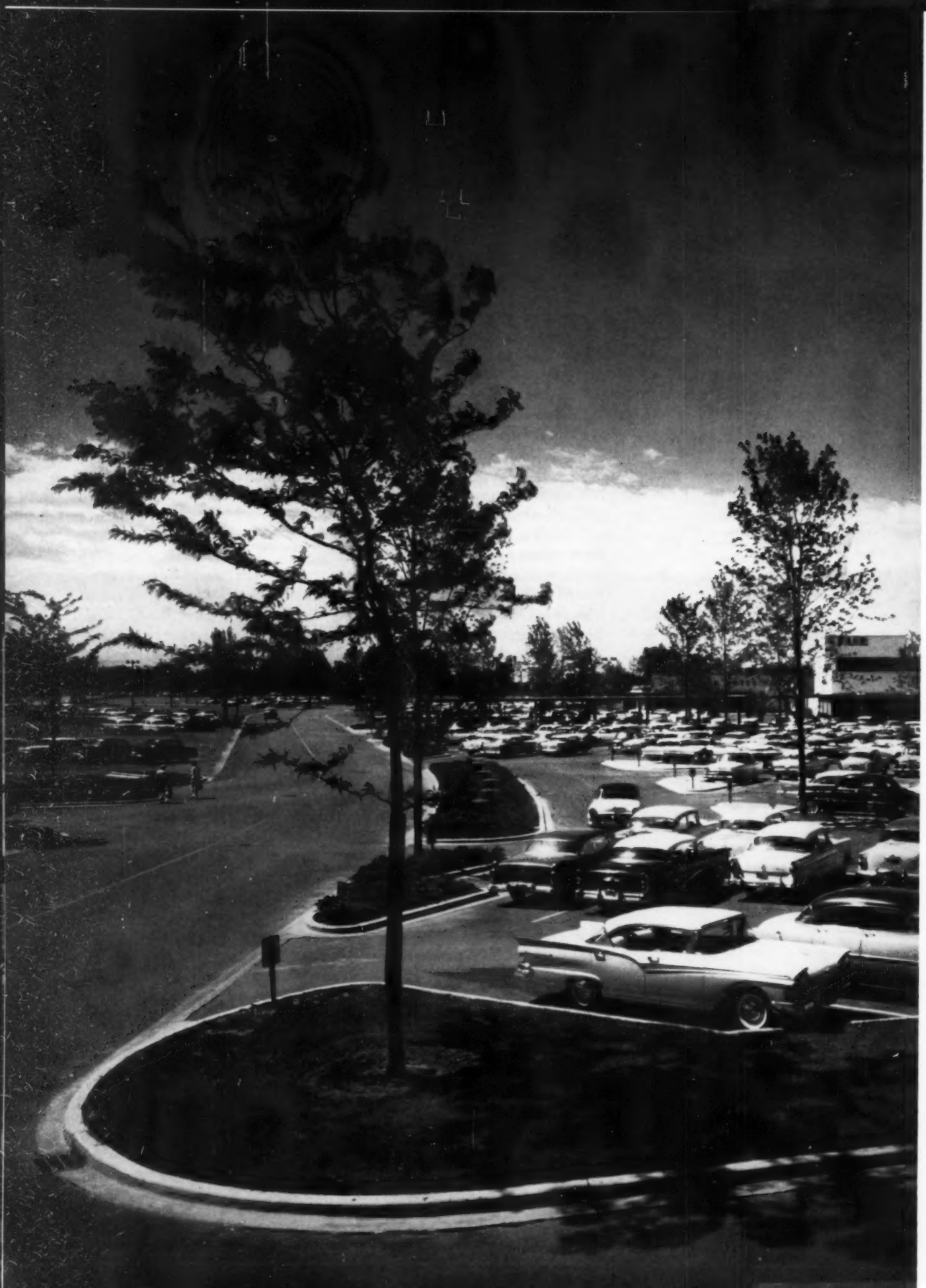
Architectural scale plays a most important part in relating customer and merchandise. It is sometimes difficult for architects to remember that a piece of architecture — the building — should be considered as a frame for the picture of the love affair between a customer and a piece of merchandise. When the frame is too big, the customer is apt to feel that both she and the merchandise are inadequate — too small — to consummate the attachment.

The Future

As more large Shopping Centers are constructed and they begin to compete, which will be successful? Price competition, quality of merchandise competition, operational economies, and so on are important factors. But for the designer, all other things being equal, might it not be true that the architectural solution most sensitive to the psychological and social needs of the customers will have a final edge? Is this a lesson from the past and other contemporary merchandising plans?

The present day sees one disciplined straight-line mall or open strip development after another, most of them fairly successful. They tell all about themselves as soon as possible, and all the merchants are given an even break. Such schemes are rational, successful, convenient, efficient, smart, fashionable — but how many show human understanding and a love of adventure?

It remains to be seen whether or not the limited view, more attention to human scale, the lure of around-the-corner, the conscious creation of a sense of adventure will contribute to — or even be necessary for — the success of the evolving American Shopping Center. I think they will.



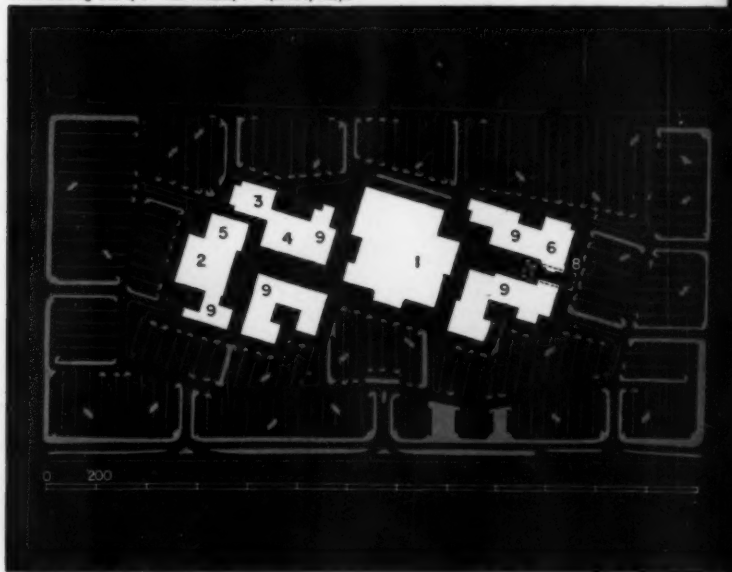
GARDEN SETTING LENDS CHARM TO CHICAGO'S NEWEST CENTER

A gratifying experience awaits the shopper at Old Orchard, for here one will find a center that possesses a personality peculiarly its own — one which is both charming and unusual. As one strolls about he becomes pleasantly aware of a scene that changes refreshingly — he finds change of pace, of scale, of direction, of shape, of surface. Yet underlying all is the basic unity necessary to wholeness. The lure of around-the-corner urges the shopper on, so he sees more merchandise than he otherwise would. Here is clever planning for business and a delightful environment for humans.

The plan has as its center of gravity the Marshall Field & Co. store, with the professional building and The Fair department store as outlying anchors for the additional stores, service establishments, and restaurants. Study of the plan reveals an informal arrangement that provides, between the buildings, a series of spaces that expand and contract; that are sometimes contained but always continuing. One's view is constantly limited, but never confined.

The one-story buildings have structural steel frames on 20 by 40 ft bays, precast lightweight roof slabs, and brick exteriors; the department stores and professional buildings are framed in reinforced concrete on 25 by 25 ft. bays, have floor and roof slabs of poured concrete, and a variety of finishes. There is an underground truck tunnel for Marshall Field & Co. The entire project is air-conditioned. Heating and cooling comes from a central plant; tenants are billed on a unit cost basis.

1—Marshall Field & Co., 2—The Fair, 3—Supermarket, 4—Variety Store, 5—Drug Store, 6—Restaurants, 7—Office Building above, 8—Bus Platform, 9—Specialty Shops

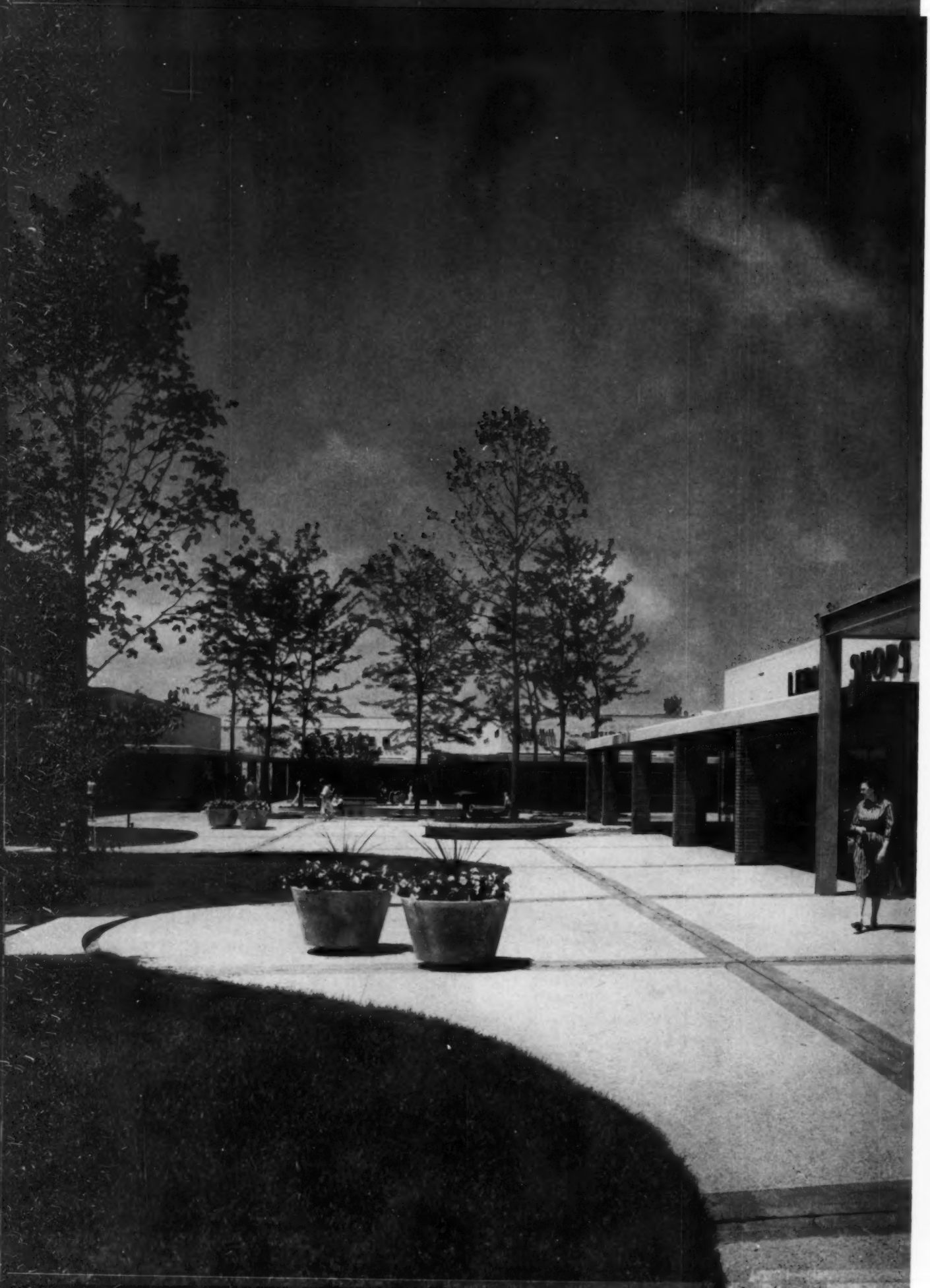


OLD ORCHARD SHOPPING CENTER
Skokie, Illinois
Owner: Old Orchard Business District, Inc.
Rental Agents: Draper & Kramer

Architects: Loebl, Schlossman & Bennett

Consultants: Landscaping, Lawrence Halprin & Associates; Mechanical & Electrical, Robert E. Hattis Engineers; Structural, Alfred Benesch & Associates; Civil Engineering, Joseph A. Schudt & Associates; Traffic Consultants, George Barton; General Contractors, Island Construction Co.

Photo, left page, Hedrich-Blessing



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All photos by Hedrich-Blessing

OLD ORCHARD:

Principal motor entrances are marked by the double-O symbol on white painted brick pylons, **1.** The pylons act as identifiers rather than gates or closures; aid the driver in finding his way either in or out.

As one enters to the right of the Fair store, he walks into the mall, **left page,** leading to the supermarket. A backward glance, **2,** with the Fair now at right, shows the fountain marking the turn into the mall at right angles leading to Marshall Field & Co. The fountain is of concrete and is underwater-lighted at night.

Throughout the center, the various buildings are linked by covered walkways, a typical example which is shown in **3.**

4

5

6

All photos by Hedrich-Blessing

OLD ORCHARD:

Opposite approaches to the Marshall Field & Co. store, **4** and **5,** are interestingly different both in scale and character. Passing through the professional building concourse, one comes upon the intriguing serpentine pool, **left page,** set within a protected court. From the Fair store, **6,** the way is more open, larger in scale.

Though there are two basic building heights, (approximately 9 and 12 ft), one can note — in all the pictures — a pleasing continuity of canopy line throughout the center which serves as a unifying tie. Typical paving is concrete with exposed pebble aggregate, marked by brick strips in a modular pattern that aligns with the building modules.

7

8

9

All photos by Hedrich-Blessing

OLD ORCHARD:

The various courts adjoining the copper-roofed Marshall Field & Co. first floor, **7, 8, 9,** and **left page,** are charmingly landscaped. Low fieldstone walls form islands in a variety of shapes that serve effectively both to contain planting and to break one's line of travel (cf Bennett, pp. 217–219). The atmosphere here is pleasingly gardenlike and low pressure — but business is good!

The 7-story professional building, **left page,** is surmounted by the center water tank, which is clad in white plastic and which will carry, upon completion, the Old Orchard sign. The spandrels are light-colored brick; the strip fenestration is of fixed aluminum sash; the mechanical shaft is red brick.

OLD ORCHARD

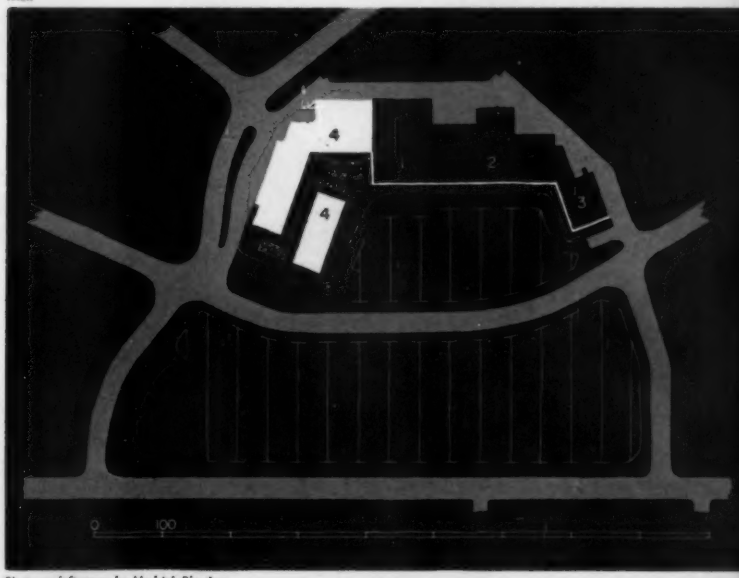
SMART ADDITION ADDS STYLE TO SMALL CANADIAN CENTER

Small shopping centers that are based on a plan idea that offers either a better arrangement for merchandising and service or shopper amenity — or both — are rare indeed. One is much more likely to encounter one of those depressing little strips — cheap, shoddy, and vulgar in character — that dot the highways everywhere. Here, in suburban Toronto, a passable but fairly undistinguished bent-strip has been given considerable style, a large measure of attractiveness, and a workable scheme for retailing by a well designed addition.

The plan forms an angled U, with a separate road for service at the rear. Such a solution shortens walking distances and provides limited views that tend to hold the shopper's attention within the group. The new construction houses specialty shops which are disposed along both sides of a short, open-ended shopping lane that leads in one direction to the parking area and in the other to a garden court. The court becomes the plan hinge; links old and new; is the visual center of interest for the entire arrangement. An effort was made to relocate the highway along the outer edge of the parking area, but permission could not be obtained. Its location is disadvantageous, since it divides the parking space and must be crossed to reach the stores.

The original stores were having an indifferent financial success, but the addition has increased business substantially, more than offsetting construction cost, which totaled $16 per sq ft.

1—Existing Supermarkets, 2—Existing Variety Store, 3—Existing Drug Store, 4—New Specialty Shops and Garden Mall



HUMBERTOWN SHOPPING CENTER
Toronto, Ontario, Canada
Owner: Consolidated Toronto Development Corp., Ltd.

Architects & Engineers:
Victor Gruen & Associates
Associated Architects: Hanks & Irwin

Photo on left page by Hedrich-Blessing

1

2

3

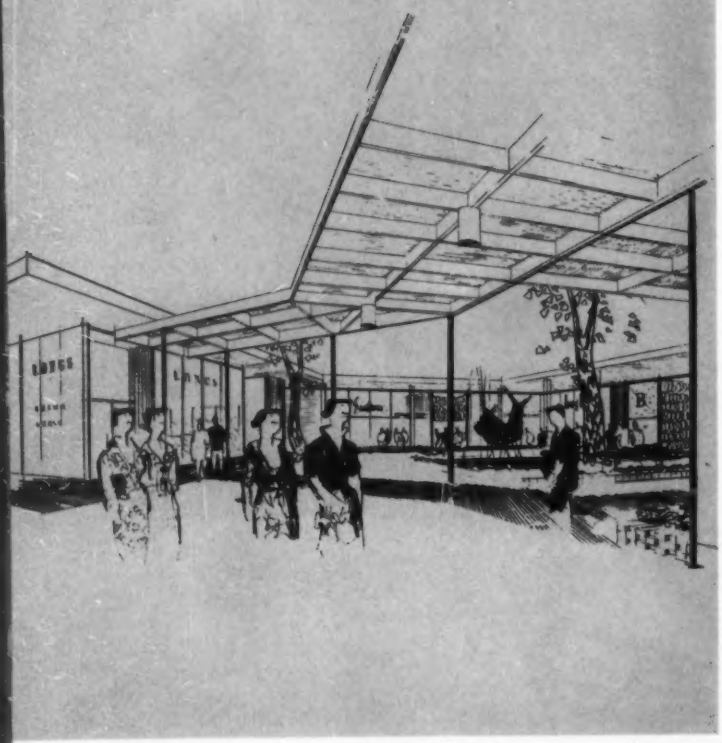
All photos by Panda

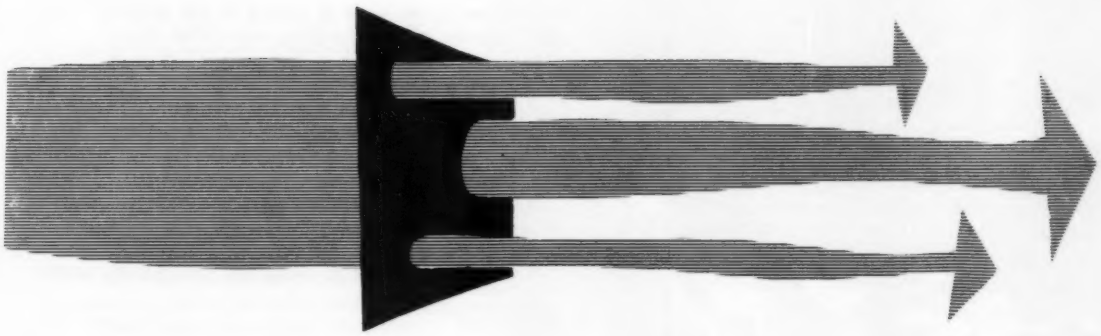
HUMBERTOWN:

The picture as one looks across the parking area into the U-shaped arrangement, **1**, reveals the character of the existing stores, located in the foreground.

The new buildings are grouped about the double loaded shopping lane, **2**, and the landscaped court, **3** and **left page**, which acts as a link between the existing and the new structures and also serves as an attractive focal point for the shopper.

HUMBERTOWN





Potentialities of High Velocity Air Conditioning

By F. J. WALSH, Consulting Engineer, New York City

This is a guide to the various types of systems and their components, along with a discussion of how they work and some of the problems involved in system design

IN AN AIR CONDITIONING installation, the system cost is affected mainly by the analysis of the practicable means of distributing the cooling effect to produce required temperature and humidity conditions and insure flexibility in system operation. This involves detailed system analysis and an engineering economy analysis of alternate possibilities.

Today, the solution to the problem of limited space for system installation necessarily requires that the high velocity air distribution be considered in those portions of the central duct system where space is critical. The use of higher velocities and system pressures can be combined with the use of colder supply air in a high temperature differential system (see Terminology) to achieve maximum space savings using only air as the cooling medium. Even greater space savings can be achieved by distributing part of the cooling effect to the terminal air handling units using water. The least space of all would involve distributing water alone, with only provision for minimum ventilation air, but this would involve excessive use of mechanical refrigeration.

Definition of High Velocity

"High velocity" air conditioning systems will be considered as including those systems in which all or an important portion of the air supply system has been designed to transmit air at such pressures and/or velocities that special flow regulating devices and/or sound absorbing means are required to reduce the sound level within the occupied spaces to an acceptable level. At the terminal ends of the "high velocity" duct, air valves and attentuating devices must be provided to reduce the velocity, pressure and noise to an acceptable level. The exact noise limits will depend upon the allowable sound levels for the particular type of occupancy.

In general, the term "high velocity" will include most of those systems in which duct air velocities are above about 2000 ft per minute and/or the duct air pressures are above about 2 in. of water. The above definition includes not only "all air" systems but those systems in which only ventilation or primary air is supplied to the terminal units or terminal outlet units (see Terminology) with the balance of the cooling or heating being done by coils within the units or by other means such as radiant heating-cooling panels, conventional radiation, etc.

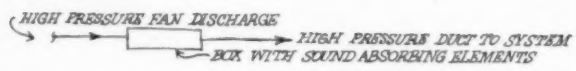
Development of High Velocity

In recent years there has been a gradually increasing demand for year-round temperature control on an individual basis. Previously separate radiation had been provided at the periphery and conventional low pressure duct systems were used to distribute air for ventilation or cooling, with limited zone temperature control provided using reheat or volume control.

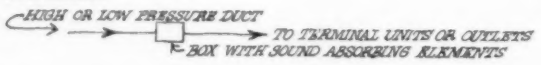
Because peripheral heating and cooling loads are subject to the widest variation, an intermediate step in line with the "individual control" trend was the use of fan coil units (generally with separate ventilation air) and "all air"

BASIC SYSTEM ELEMENTS AND COMPONENTS

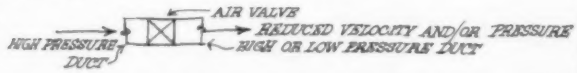
1. Fan Silencer



2. Duct Silencer

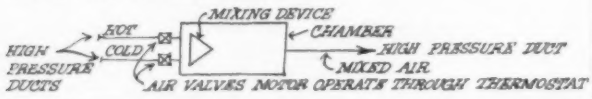


3. Air Valve



4. Duct System Static Pressure Regulator

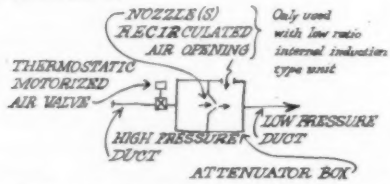
5. High Pressure Mixing Chamber



6. Terminal Air Units

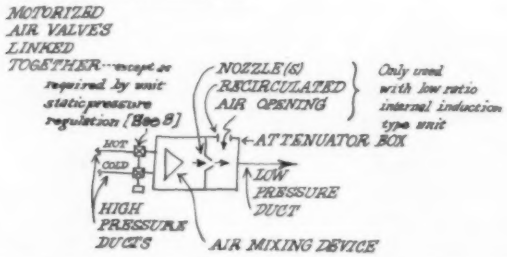
Notes: (a) On high temperature differential systems low ratio internal induction type unit is used; (b) For arrangement of unit static pressure regulation (other than stable duct systems—where shut-off or volume control is needed) See Item 8.

A. Terminal Attenuator Box



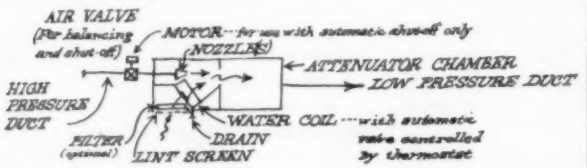
Note: Acoustically lined fan coil unit casing can sometimes be used also.

B. Terminal Attenuator Mixing Box


MOTORIZED AIR VALVES LINKED TOGETHER—except as required by unit static pressure regulation (See 8)
NOZZLE(S)
RECIRCULATED AIR OPENING
Only used with low ratio internal induction type unit
ATTENUATOR BOX
HOT
COLD
LOW PRESSURE DUCT
HIGH PRESSURE DUCTS
AIR MIXING DEVICE

7. Terminal Air Handling Units (not standard)

Note: See Note 6(b)



High Ratio Internal Induction Air and Water Terminal Air Handling Unit (Induction Air Handling Unit)

8. Terminal Air Unit Static Pressure Regulation Arrangements

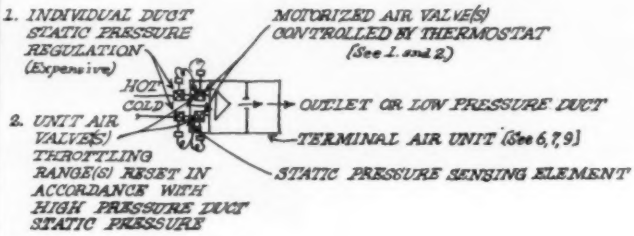
(used with high friction duct systems only)

Notes: A Not used thus far. B present standard.

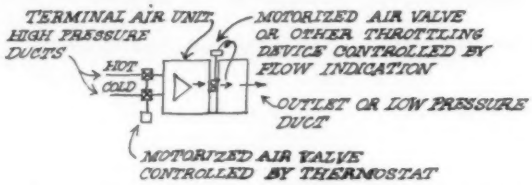
Single duct application:

A.—Similar; B.—(1) Not applicable, (2) Same as shown for cold duct control, (3) Same as shown for hot duct control

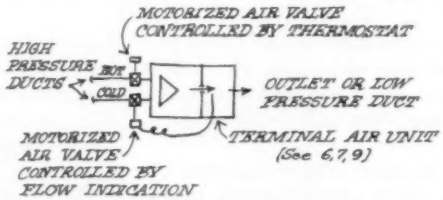
A. Direct Method (1) Regulation of pressure on high pressure side of unit air valve(s); (2) Reset of throttling range(s) of air valve(s) in accordance with static pressure on high pressure side of air valve.


1. INDIVIDUAL DUCT STATIC PRESSURE REGULATION (Expensive)
MOTORIZED AIR VALVE(S) CONTROLLED BY THERMOSTAT (See 1. and 2.)
HOT
COLD
OUTLET OR LOW PRESSURE DUCT
2. UNIT AIR VALVE(S) THROTTLING RANGE(S) RESET IN ACCORDANCE WITH HIGH PRESSURE DUCT STATIC PRESSURE
TERMINAL AIR UNIT (See 6, 7, 9)
STATIC PRESSURE SENSING ELEMENT

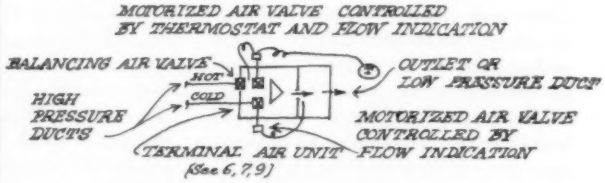
B. Indirect Method—Control of air valve or valves from volume of flow indication combined with control from thermostat (except constant volume single duct system).


TERMINAL AIR UNIT HIGH PRESSURE DUCTS
MOTORIZED AIR VALVE OR OTHER THROTTLING DEVICE CONTROLLED BY FLOW INDICATION
HOT
COLD
OUTLET OR LOW PRESSURE DUCT
MOTORIZED AIR VALVE CONTROLLED BY THERMOSTAT

1. Thermostatic control of linked air valves plus mixture throttling


MOTORIZED AIR VALVE CONTROLLED BY THERMOSTAT
HIGH PRESSURE DUCTS
HOT
COLD
OUTLET OR LOW PRESSURE DUCT
MOTORIZED AIR VALVE CONTROLLED BY FLOW INDICATION
TERMINAL AIR UNIT (See 6, 7, 9)

2. Cold valve throttling plus thermostatic control of hot valve (No positive control of total volume if design hot duct flow is large per cent of design cold duct flow)


MOTORIZED AIR VALVE CONTROLLED BY THERMOSTAT AND FLOW INDICATION
BALANCING AIR VALVE
HOT
COLD
OUTLET OR LOW PRESSURE DUCT
HIGH PRESSURE DUCTS
MOTORIZED AIR VALVE CONTROLLED BY FLOW INDICATION
TERMINAL AIR UNIT (See 6, 7, 9)

3. Cold valve throttling plus hot valve thermostatic control combined with throttling

9. Terminal Outlet Units See notes 6(a) and 6(b)

(a) High internal induction air and water terminal outlet unit (induction unit)—Same as Item 7 plus outlet grille

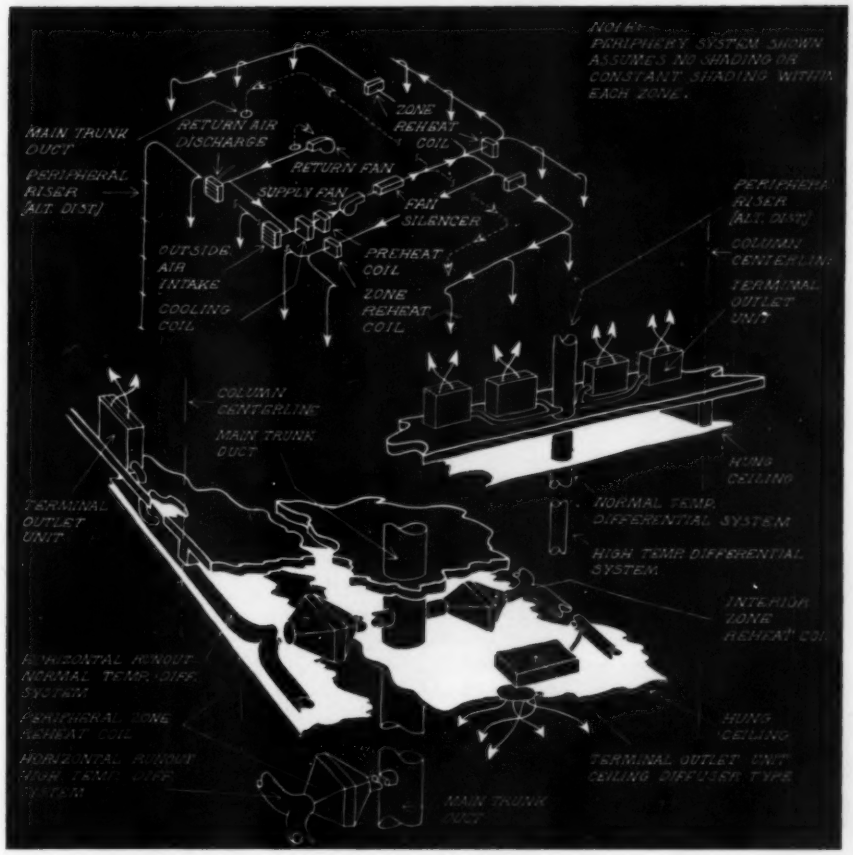
(b) Single Duct Terminal Outlet Unit—Same as Item 6(A) plus outlet grille or diffuser

(c) Double Duct Terminal Outlet Unit—Same as Item 6(B) plus outlet grille or diffuser

General note: Air valves, high pressure mixing chambers, terminal air units, air handling units and outlet units can all be used satisfactorily with low pressure air.

SINGLE DUCT ALL AIR SYSTEM

1. Notes—Pictorial Representation
   (a) System shown is representative of that for a medium size multistory building.
   (b) Intent is merely to give an approximate idea of relative space requirements.
2. Notes—Basic System Design
   (a) *Fans*—provided with speed control or adjustment or variable inlet vane control, as demanded by required operating ranges.
   (b) *Fan Silencers*—Number and location determined by duct layout.
   (c) *Duct System Static Pressure Regulation*—As required by extent of terminal unit volume control and/or shutoff provisions.
   (d) *Duct Silencers*—As required by installation details.
   (e) *Duct System Air Valves*—As required for balancing or partial operation, or with duct system static pressure regulation.
   (f) *Double Duct Terminal Outlet Unit*
      (1) Standard unit.
      (2) Low ratio internal induction type.
   (g) Number and Location of Reheat Coils determined by zoning and system design.
3. Possible Basic System Design Modifications
   (a) Combinations of reheat and Volume Control
   (b) Air Supply to Terminal Attenuator Boxes supplying low pressure duct system.
   (c) Use of high velocity return air system (fan silencer required).
   (d) Shut-off of primary air to terminal units. Consideration has been given to this by certain manufacturers but application to date has been limited and analysis incomplete.



low pressure induction units, provided with a reheat coil and/or means for volume control.

To meet the increasing demand for reducing space requirements, while still providing individual temperature control, "high velocity" air distribution was introduced, requiring the use of high velocity terminal units using air valves (see Terminology). The terminal units developed were: standard all-air mixing units, air and water induction type terminal outlet units and single and double duct terminal outlet units. Most of these are employed on peripheral systems.

The latter have been termed "high velocity" type terminal units because of the timing of their development and because they have been used almost entirely on high velocity type air conditioning systems.

However, most of these high velocity type terminal units used today actually find their application at terminal pressures in the low pressure range (1½ in. s.p.), with 3 in. s.p. usually set by the manufacturer as a maximum.

Very often enough space is available so that the ducts can readily be designed for conventional low pressure — low velocity operation, and it would be economical to do so. Thus, if present standard "high velocity" units were used with lower pressures, the advantages of individual temperature control would be retained. It is unnecessary for present units to be redesigned for use at lower pressures, since any savings in cost for terminal units would be negligible. Actually, some high velocity system elements such as air valves have been used on recent low pressure school warm air heating installations.

Relative Advantages at High Velocity

Regardless of the structure an architect may propose to build, it is generally possible to design an air conditioning system to give any reasonable set of conditions, if cost is no object.

High velocity in air conditioning has been developed to satisfy a basic architectural requirement, that of reducing space required for air conditioning ducts and equipment to a minimum. This is particularly true with reference to peripheral duct shaft space in new buildings. Reduction in horizontal trunk duct sizes is another requirement although this is generally not as critical except where horizontal runouts are made to a peripheral "all air" system, since peripheral supply rates are high relative to the interior. What is just as important is the fact that the high pressure system allows greater centralization of air handling equipment where shaft space is limited, resulting in greater available rental space and lower average first cost.

Centralization is particularly important in a large multi-story office building or hotel. In the case of an office building, in an area where height is restricted by zoning, the use of high pressure air distribution may allow an additional floor of rental space on the same plot, (e.g. if all air peripheral system with horizontal runouts is used.) If limitations on duct space is a problem, it is generally possible to provide for future increases in capacity in portions of an air conditioning system more readily with a high

velocity system than with a low velocity system. Duct system stability would be required in either case.

While a high velocity system takes less space, it requires more expensive fans, sound attenuating treatment and air control devices, and ductwork (not always true) and requires more fan horsepower for the same volume of air handled.

Factors Affecting System Selection

General Considerations on Duct Design and System Stability.

There is a wide variety of high velocity system designs possible and it is essential to best overall design that the engineer be given the maximum possible amount of space for risers, shafts and trunk ducts, since this will give him more freedom in design and result in a better, economical and more flexible system.

Even though the architectural concept of a building may dictate the use of a high velocity air conditioning system in certain areas, it does not mean that all parts of the system should be designed for high velocity.

It is possible to have a high pressure and a low velocity or a high velocity and a low pressure, as well as any combination of velocities and pressures, depending entirely on the design. However, the flow of air at high velocity results in higher friction which increases in geometric proportion with the velocity, greatly increasing required system pressure. Basically, the ducts should be sized to take advantage of all available space, particularly the branch ducts (since for the same velocity, friction will be in inverse proportion to the diameter). This will keep duct friction and system pressure at a minimum and make the system easier to balance.

Generally, it will be possible to use a stable duct system (see Terminology), although, very often this will require additional static pressure regulation within the duct system beyond the fan.

A high friction duct system (see Terminology) should be used only if there is no other alternative because of the greater cost of terminal units due to provision for static pressure regulation.

From the standpoint of ability to control air flow, it makes little difference, whether a system is a high velocity (high pressure) system or whether it is a low pressure — low velocity system, as long as a stable duct system is used. However, high velocity air conditioning systems should always be designed taking into account the effect of static regain (see Terminology).

Without inherent stability (stable duct system) or built-in stability (high friction duct system plus terminal unit static pressure regulation), the system cannot be operated to allow terminal unit volume control or shut-off.

It is basic to any type of fluid flow (air, steam, water, etc.), to take a relatively large pressure drop across the final flow regulating devices with a relatively small pressure drop throughout the distribution system. Unless this is done there will necessarily be relative pressure unbalance within the system, which can result in considerable changes in flow at the terminal outlets whenever there are changes in flow within the system due to outlet shut-off or use of volume control.

An analogy can be made with the case of a water faucet in the upper story of a small building. When street pressure is high there is satisfactory flow at all outlets. When street pressure is low, the pressure and flow on the upper floors varies greatly. Faucets on the lower floors always have adequate flow, but any flow on the upper floors drops sharply whenever water is drawn on the lower floors.

Ordinarily duct pressures at the terminal outlet units which have volume control or shut-off will be greater than design pressure, because duct flow volumes are reduced below original design requirements, reducing friction drop in ductwork to outlets. Without terminal unit static pressure regulation, this would result in greater than design flow from the outlets. This in itself is not necessarily much of a disadvantage since the outlet itself (not terminal unit) could be selected to distribute considerably more than the design quantity of air and the thermostatic control would be relatively unaffected. Volume variation within limits is not objectionable if not accompanied by drafts or objectionable noise at the outlets. There would be more of a problem with reduced air flow, particularly with cold air.

System Analysis and Design

It has been mentioned that there are innumerable high velocity system combinations possible — high velocity plus low velocity and high velocity primary air or ventilation air plus secondary water coil. Any of these could be combined with reheat or booster cooling (see Terminology) to give various degrees of control.

High velocity air conditioning systems, excepting peripheral air and water systems (which are more or less standardized in design) can be exceedingly complex to analyze. There is considerable disagreement on basic considerations such as duct design, balancing and test, static pressure and volume control within the system, at the fan, and at terminal units. The design of "all air" systems cannot be standardized as with the air and water induction system. There are too many possible variations concerning location of system elements, fan and duct system static pressure control and the relationship of thermostatic control to fan and duct system static pressure control.

The engineer does not have complete and industry-wide accepted system design information, particularly on all-air systems. In such cases it is very difficult to come to positive conclusions. However, the engineer must investigate data on all aspects of design from every source, on a current basis, or he will not be in a position to do the best possible job for his client.

Where possible the engineer should specify in detail the operating performance of all elements of the system — noise levels, operating pressure limits, leakage, etc. Manufacturers of equipment specified should be asked to check design drawings to see that their equipment will work properly under stated conditions. Progress is being made on specifications regarding noise levels, but standards covering ratings and tests still require further study.

Duct Location

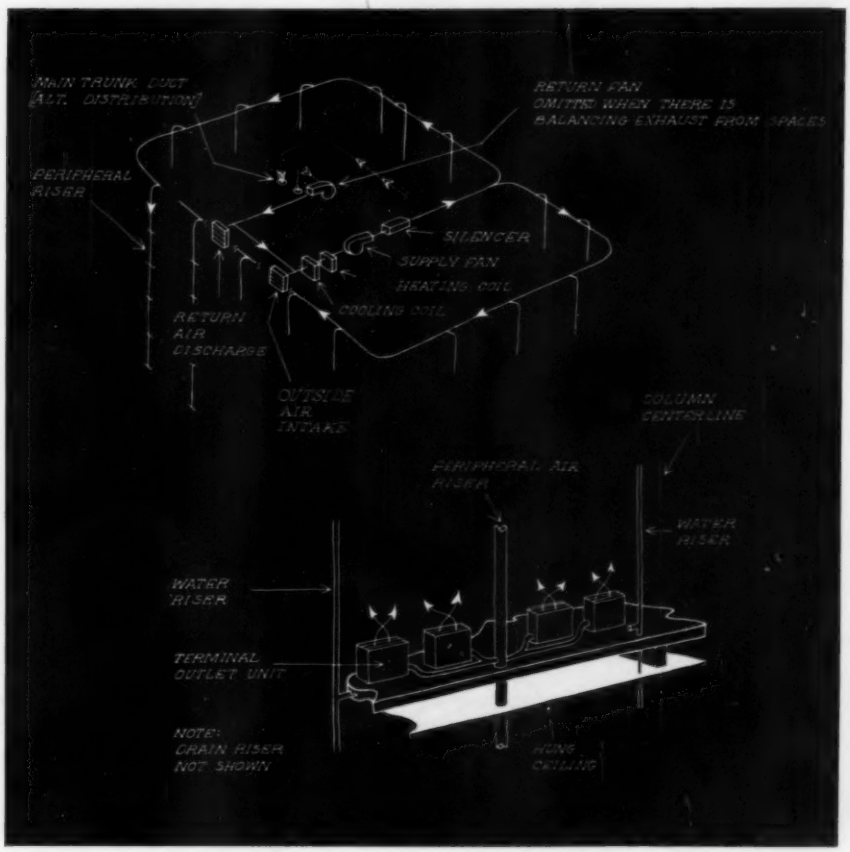
The periphery is the most suitable area for application of high velocity air conditioning, since there is generally a far greater limitation on shaft space for ducts and pipes there. Also the least expensive method of distributing the cooling effect to peripheral terminal elements in a multistory building is by the use of vertical distribution shafts.

Interior Zones

An important question today is: "How much actual need is there for high velocity air conditioning in the interior zones of a building?" In an office building, the cooling load for the peripheral zone, principally due to the highly variable

AIR AND WATER
PERIPHERAL SYSTEM

1. Notes—Pictorial Representation
   (a) System shown is representative of that for a medium size multistory building.
   (b) Intent is merely to give an approximate idea of relative space requirements.
2. Notes—Basic System Design
   (a) *Fans*—provided with speed control or adjustment or variable inlet vane control, as demanded by required operating ranges.
   (b) *Fan Silencers*—Number and location determined by duct layout.
   (c) *Duct System Static Pressure Regulation*—As required by extent of terminal unit shutoff provisions.
   (d) *Duct Silencers*—As required by installation details.
   (e) *Duct System Air Valves*—As required for balancing or partial operation, or with duct system static pressure regulation.
   (f) *Terminal Outlet Units*
      (1)—"Induction Unit"
      (2)—Terminal Attenuator box—Fan coil unit combination.
3. Possible Basic System Design Modifications
   (a) Part of primary air supply can be directed to larger fan-coil air supply units, or to "induction air handling units," supplying a low pressure duct system and outlets.
   (b) Use of high velocity return air system (fan silencer required).
   (c) Shutoff of primary air to terminal units. (Very little done on this at present.)



sun and transmission "skin load," is two to three times that of the interior zone, per occupied square foot. This means that the interior zones generally require relatively small supply air quantities and therefore duct sizes.

The relative importance and magnitude of the peripheral and interior air conditioning loads will determine whether they should be combined and to what extent. There may be theoretically unsound solutions resulting if they are combined, particularly in double duct all-air systems. For example, if the peripheral zone is used for heating in an all air system, the entire system would generally have to be run for all the spaces in all the unoccupied hours; in addition there would be added complexities in terms of system analysis, thermostatic control and system static pressure regulation. If there are more or less open floors with no closed in peripheral offices, there is the minimum chance of encountering difficulties when the zones are combined under one system.

Duct Shapes

The engineer has a choice of three basic cross-sections (1) rectangular or square (2) round (3) flat-oval. The last has been used extensively in marine work and has promising possibilities. It has been used on some commercial jobs. The circular and flat-oval ducts can employ higher velocities than the square or rectangular without objectionable noise, due to air velocities and pressures since they have more freedom from buckling due to internal pressure.

Fan Noise

One of the most important design limitations of high velocity air conditioning is that of system noise. In many cases it is the actual limiting design factor. This is easy to see when one understands that the principal difficulty is with attenuation of low frequency fan noise (low frequency noise being more difficult to attenuate than high frequency noise). Total fan noise is proportional to the square of the fan system pressure and proportional to the volume of air being handled. Larger air volumes and higher system pressures are the inevitable result of greater fan system centralization. Therefore, maximum centralization, when high velocity is used, results in the most severe fan noise problem.

Air Shut-Off

An item of major importance which seems commonly to have been overlooked in many current designs is that of provision for shut-off of air to unoccupied sections or floors of multistory buildings and provision for economical night time and off hours operation. There is no reason for assuming that high occupancy usage will always be the case.

Return Air

It is interesting to note that not only supply air, but also return air duct systems can be designed for high velocity operation. However, there is generally not too much requirement for this since the return shaft is always in the interior core of the building where more space is available.

Principal Types of H.V. Systems

The principal types of high velocity air conditioning systems used today are the following:

1. Primary Air and Water Peripheral Systems
   (a) Induction unit systems.
   (b) Fan-coil unit systems.
2. Single Duct "all air" systems.
3. Double Duct "all air" systems.

1. Primary Air and Water Peripheral Systems

In these systems a constant volume of cooled and dehumidified primary air is supplied to each terminal outlet unit to provide ventilation and/or moisture removal for the spaces.

These systems are designed primarily for peripheral zone application. Their minimum shaft space requirement allows maximum practicable centralization when vertical peripheral shafts are used. This gives a low first cost installation.

It is possible in a few instances to have the peripheral system also serve satisfactorily some interior areas and corridors when these are relatively small. However, this will depend on where system riser shafts are located with respect to interior spaces.

(a) *Induction Unit System*

This high velocity system was the earliest one to be developed and has had a very wide application. It is ingenious in concept and, if properly applied with respect to changeover point (see Terminology), represents a good economic balance between first cost and utilization of both air and water as the cooling mediums. The space saving achieved is at the expense of a lower changeover point, since the system employs water to handle part of the cooling load.

Generally it is economically unsound to attempt to use this sytem at changeover points below 45–50 F (for optimum annual cost). It would also be uneconomical to design for a changeover point much higher than about 50 F since the supply ducts would approach in size those of an all air system and the cost of the water system would be relatively high for what it would accomplish.

The system functions as follows: High pressure primary air (see Terminology), passing through a series of nozzles in the terminal outlet unit induces several times this quantity of room air past a secondary chilled water coil and delivers the mixture through the unit outlet to the conditioned space. The primary air quantity is sufficient to provide ventilation and all necessary latent heat removal. The secondary water coil system is designed to remove sensible heat only, not moisture, and is controlled by automatic water valves under thermostatic control. The drain line from under the coil is sometimes omitted, but, since secondary air flow can be restricted or high moisture load operation be unavoidable at times, there is no guarantee that the coil will operate dry during all normal occupancy periods.

On the summer cycle, as a minimum, the cold, constant temperature primary air supply has the capacity to handle the moisture and transmission loads. The secondary water coil handles load due to sun, lights and people.

At the "changeover point" cool primary air plus negative transmission just offsets the load due to sun, lights and people.

At outside temperatures above the changeover point, reheated primary air offsets negative transmission.

Below the changeover point, cold primary air is held at constant temperature and hot water is sent to the secondary coil to provide heating, with water temperature varied according to outside temperature. Cooling and heating are available at all times when needed.

2. Single Duct All Air Systems

These systems, basically, are an extension of the use of conventional low pressure, low velocity systems, and quality of performance is similar. During the cooling season they may be unable to produce satisfactory humidity conditions in diverse zones unless the primary air temperature is maintained constant and combined with zone reheat.

Where volume control only is used as a means of control for zones or individual spaces, the system is limited by the possibility of unsatisfactory air distribution and reduction in required dehumidification. This objection can be overcome by limiting the maximum per cent reduction in volume and using reheat for control beyond that point — limited reheat system (see Terminology). In addition, if total system load at any particular time is considerably less than system design load, there may be complicated problems in fan control and performance, noise levels, static pressure control, system unbalance, etc.

The allowable per cent reduction in volume at any terminal outlet unit during normal operation would depend on the supply air temperature differential and the performance characteristics of the outlet. Minimum volume should not be so low as to cause a feeling of stagnation or to provide inadequate ventilation.

3. Double Duct All Air System

These systems, since they distribute a maximum amount of primary air, will always result in an installation having a higher changeover point than is possible with the air and water systems, reducing required operating hours for the refrigeration plant. In addition, since heat is always available in the hot duct when needed, provision for heating and for cooling for any zone or terminal unit is simple and automatic.

Accurate control of temperature for any number of spaces desired will always result with any double duct system. Limitation of maximum humidity in any space under varying load conditions will necessarily require the use of reheat, and, even though any double duct system acts as a limited reheat system, the design should keep the use of reheat to a minimum so as not to be wasteful of refrigeration capacity. In the double duct system, application of reheat depends on analysis of zoning requirements and reset of zone hot duct temperatures. Proper analysis of this can be difficult.

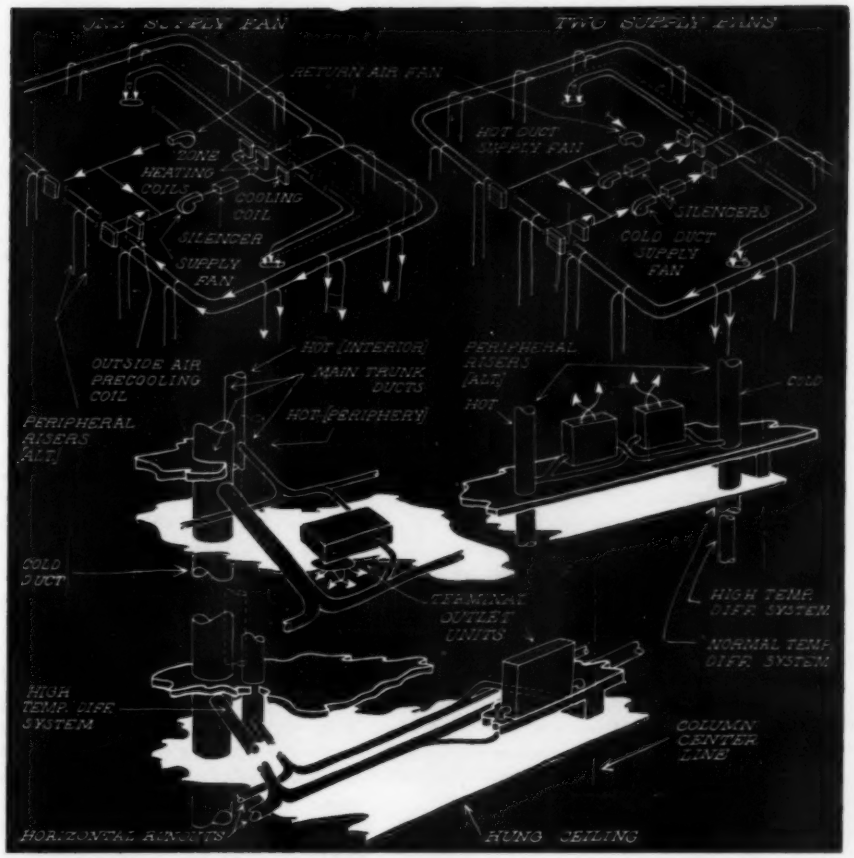
System design is complicated because of several factors:

(a) Diversity of loads due to centralization and zoning may be great and a calculation of actual room humidity conditions resulting from mixed air supplies in the rooms has to be made on a trial and error basis which depends on assumptions as to how hot duct temperatures will be controlled. It would simplify design analysis and prediction of resulting room conditions if all hot duct and cold duct supply air were dehumidified to the same point but this would require additional refrigeration capacity. This problem is important not only from the standpoint of being able to calculate satisfactorily total building load but also from the standpoint of system analysis. Well thought out standard procedures need to be established which will simplify this analysis. For interior zone loads such as in an office building, the loads are relatively constant and analysis is greatly simplified.

(b) It is a volume control system so far as both hot and cold ducts are concerned. System stability, outlet noise and required static pressure control will depend not only upon proper duct design and terminal unit selection for maximum flow condition in each duct, but the effect of hot duct temperature reset control (see Terminology) as determined by system analysis. Built-in static pressure regulation at each ter-

DOUBLE DUCT ALL AIR SYSTEM

1. Notes—Pictorial Representation
   (a) System shown is representative of that for a medium size multistory building.
   (b) Intent is merely to give an approximate idea of relative space requirements.
2. Notes—Basic System Design
   (a) *Fans*—provided with speed control or adjustment or variable inlet vane control, as demanded by required operating ranges.
   (b) *Fan Silencers*—Number and location determined by duct layout.
   (c) *Duct System Static Pressure Regulation*—As required by extent of terminal unit volume control and/or shutoff provisions.
   (d) *Duct Silencers*—As required by installation
   (e) *Duct System Air Valves*—As required for balancing or partial operation, or with duct system static pressure regulation.
   (f) *Single Duct Terminal Outlet Unit*
      (1) Standard unit
      (2) Low ratio internal induction type
3. Possible Basic System Design Modifications
   (a) Supply to high pressure mixing chamber distribution same as single duct all air system.
   (b) Air supply to terminal attenuator mixing box followed by low pressure single duct system.
   (c) Use of high velocity return air system (fan silencer required).
   (d) Shutoff of primary air to terminal units. Consideration has been given to this by certain manufacturers but application to date has been limited and analysis incomplete.



minal outlet unit to achieve a constant volume of air from each outlet (referred to earlier in this article) has been introduced to solve the problem of system stability, but there is some question as to whether this is the final answer.

(c) Because the system is a volume control system, there can be problems relating to humidity control and maintenance of minimum ventilation, depending on which basic system is used.

The following general statements can be made regarding the basic air cycle:

(1) Generally, where outside air moisture load is high and more than a very small per cent of outside air is used in the primary air, the outside air supply should be pre-cooled separately to bring its moisture content down at least to the level desired in the conditioned spaces, except where only recirculated air is used in the hot duct (interior systems only), or the entire mixture of return air and outside air is passed through the main duct coil (wasteful of refrigeration).

It would be advantageous in some cases to have a separately controlled booster cooling coil in the duct before the hot duct heating coil to remove additional moisture without going to an extreme.

(2) Where it is desired to design a system with different changeover points (e.g. peripheral and interior zones, a two supply fan system must be used, so that 100 per cent outside air can be supplied to the zone requiring it. This system will be more complicated from the standpoint of system analysis, temperature control, and fan and static pressure control.

(3) Where zone loads vary considerably with respect to each other, either in terms of sensible heat loads (periphery versus interior) or in terms of moisture load (high occupancy versus low occupancy spaces), then separate zone hot duct reheaters may be necessary to maintain minimum ventilation (except in single supply fan systems) or to maintain satisfactory relative humidity conditions (except where system design provides low moisture level in the hot duct).

At the present time zone and system hot and cold duct temperature control is based upon an effort to stabilize the total flow of air in the system, combined very often with the use of built-in static pressure regulation at terminal units to insure constant outlet flow (high friction duct system only), and reset of hot duct temperatures to vary average hot and cold duct air volume usage.

Volume and/or static pressure regulation at the central fan installation completes the picture.

Present Status of Knowledge

The basic theories underlying the design of the various types of high velocity air conditioning systems, and suitable application engineering information regarding installation and operation of all of the various elements of the system, need to be further clarified so that detailed information is available, which would enable an engineer to readily analyze all possible types of systems and design the most suitable system to meet an owner's requirements.

Engineers should consider information from manufacturers on total system design as an aid in developing their own design for an installation, rather than as a complete analysis in itself.

HIGH VELOCITY TERMINOLOGY

Air Valve — a throttling device which is specially designed to reduce air velocity and pressure, generally against high pressure differentials, with a minimum of noise.

Air Outlet — any opening through which air is delivered to a space to provide heating, cooling, humidification, dehumidification or ventilation.

Air and Water System — system in which two cooling mediums, air and water are distributed to the terminal units.

All Air System — system in which air is the sole cooling (heating) medium to the terminal units.

Air Mixing Device — device to thoroughly mix two air streams within a plenum.

Attenuation — sound absorption.

Attenuator Box — an acoustically lined box.

Booster Cooling Coil — a secondary cooling coil used to provide additional zone cooling (when required by a more demanding load).

Box — a standard factory made or designed plenum.

Chamber — a non-standard factory made or designed plenum.

Change Over Point — the outside temperature at which maximum use of outside air quantity in the system can handle the entire cooling requirements of the zone with zone refrigeration shut off.

Constant Volume System — system in which the air supply to each terminal unit is designed to be approximately constant when the unit is in operation.

Damper — a throttling device, with one or more pivoted adjustable blades, used to regulate air flow (not suitable for use on high velocity systems because of poor flow control and noise generating characteristics.)

Duct Silencer — a box containing acoustical elements designed to reduce noises at specified frequencies.

Fan Silencer — a box or chamber containing acoustical elements designed to reduce specified low frequency fan noises.

Full Reheat Control — Temperature control in which a constant quantity of primary air is supplied to the terminal units and reheat is added by a heating element (eg. coil or electric heater) located in the zone air supply. (Maximum use of refrigeration)

High Friction Duct System — Any duct system other than a stable duct system.

High Temperature Differential System — system in which cold primary air (approximately 20–35 F. below space temp.) is distributed to internal induction type terminal units, because, without induction, the temperature from the terminal outlets would be too low for satisfactory distribution.

Internal Induction — the inducing of room air through a recirculation opening in a terminal unit caused by passing primary air through a nozzle(s), and the discharge of the mixture from the unit.

Limited Reheat Control — Temperature control in which the quantity of cold primary air to the terminal units is reduced in accordance with load to save on refrigeration, accompanied by (double duct system), or followed by (single duct system) the addition of reheat into the air stream, either by the addition of hot air (double duct system) or by the action of a heating element (eg. coil or electric heater).

Mixing Box — a box designed with components suitable for controlling the mixture of two air streams.

Mixing Chamber — a chamber designed with components suitable for controlling the mixture of two air streams.

Normal Temperature Differential System — a system in which standard terminal units are satisfactory (primary air temperature approx. 15–25 F. below room temp.), the minimum temperature being determined by the performance characteristics of the terminal outlets.

Noise Level — the amount of noise generated by flow of air past a device or by the operation of equipment.

Nozzle — a flow control device used to increase the velocity of a stream of water or air.

Primary Air — the ventilation air or conditioned air supplied directly to a type terminal air unit, terminal air handling unit or terminal outlet unit.

Reheat — heat added to the cold Primary air supply to a zone in order to maintain temperature control. (Primary air cooled to temperature required for maximum sensible cooling or moisture requirements.)

Reset Temperature Control — adjusting supply air temperature on the basis of some condition indicating changing load requirements.

Sensible Heat — "dry heat" component of cooling load.

Sound Level — the total effect in a space of all noises contributing to the overall level.

Static Pressure Regulator — device actuated by static pressure sensing element, which acts to maintain desired static pressure in a portion of duct system.

Stable Duct System — duct system designed with relatively high terminal unit pressure drops so that changes in duct static pressures due to predicted flow changes do not result in air flow quantities from terminal outlets being outside of desired limits (may include limited duct system static pressure regulation).

Static Regain — the portion of the difference in velocity pressures, between a higher velocity point in a duct system (usually fan discharge) and some other lower velocity point (usually at terminal unit) which is actually converted to a gain in duct static pressure.

Terminal — final device in a system.

Terminal Unit — unit located within a high velocity duct system in which primary air is reduced to low pressure.

Terminal Attenuator Box — box within which primary air is reduced to low pressure.

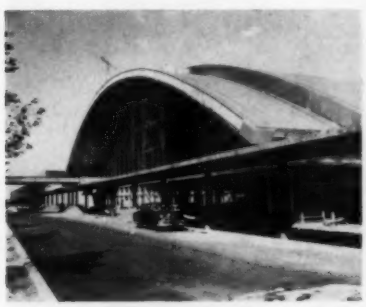
Terminal Air Handling Unit — a high ratio internal induction terminal attenuator box, including a cooling coil, which is located within a single duct primary (ventilation) air system.

Velocity Pressure — the static pressure that would result if all of the energy due to air velocity in a duct were converted to equivalent static pressure.

Zone — the largest single space or group of spaces served by a system, the temperature and/or humidity control for which is accomplished by single set of controls such that conditions within the spaces do not vary outside of accepted limits.

Charles Payne

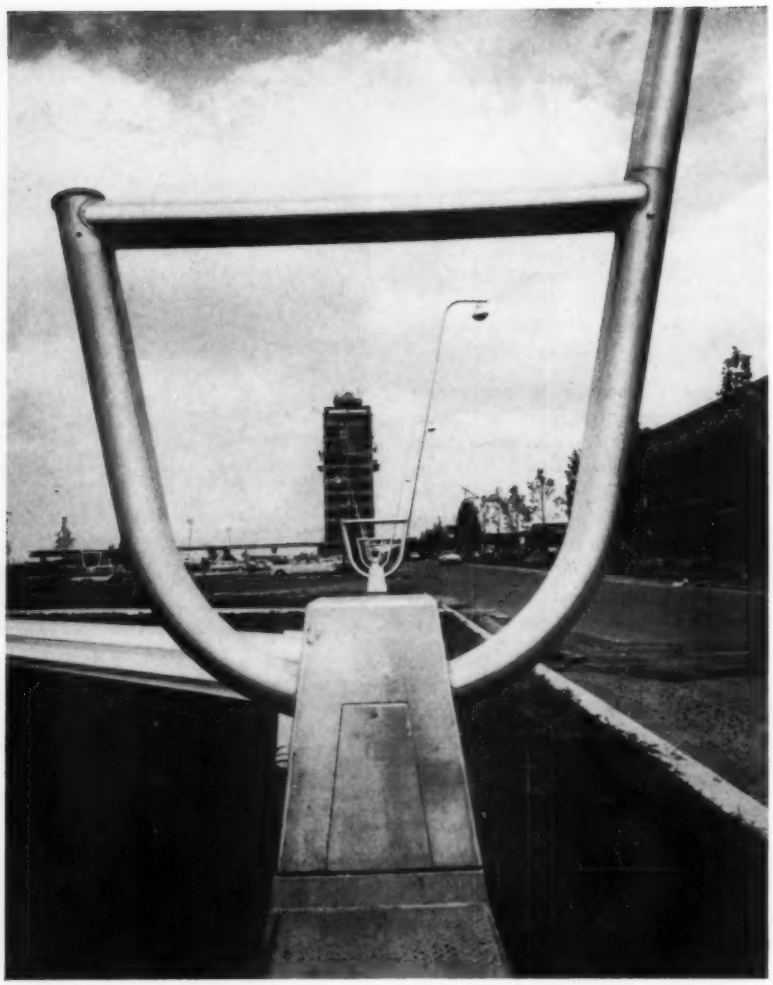
Heart of the 655-acre air traffic center now under construction at New York International Airport is the arrival group shown at right. Designed by architects Skidmore, Owings and Merrill for the Port of New York Authority, the group consists of an International Arrival Building with parabolic exit lobby (details below), Airline Wing Buildings housing the foreign-flag airlines, and an 11-story control tower



NEW YORK'S "TERMINAL CITY:" A PREVIEW

THE ROAR OF GIANT AIRLINERS over New York City's International Airport is echoed by the hum of construction on the ground below, as the mammoth building program which will make Terminal City one of the most advanced air traffic centers in the country slowly takes shape. Developed in consultation with architect Wallace K. Harrison, the complex will eventually include a main arrival building flanked by wings housing foreign-flag airlines; individual terminals for major domestic lines; an operations building and a central heating plant — all connected by an intricate system of strikingly lighted roadways, and interspersed with parking lots and landscaped areas. At present, although the individual airline terminals in most cases are still a gleam in their planner's eye, the rest of the development already hints at the scenic beauty which is expected to make this vast panorama of airport activity a major attraction for visitors to metropolitan New York.

Focal point for the 655 acre center is the International Arrival Building which, with its parabolic "gateway," adjacent wing buildings and nearby control tower, is now nearing completion. A U-shaped structure three stories high, the Arrival Building will handle all international air travelers. Outgoing passengers will check in at individual airline stations in the wing buildings, and proceed to their planes via the second floor of four double-decked arcades which provide enclosed passage to the 24 gate positions; incoming passengers will deplane, clear health, customs and im-



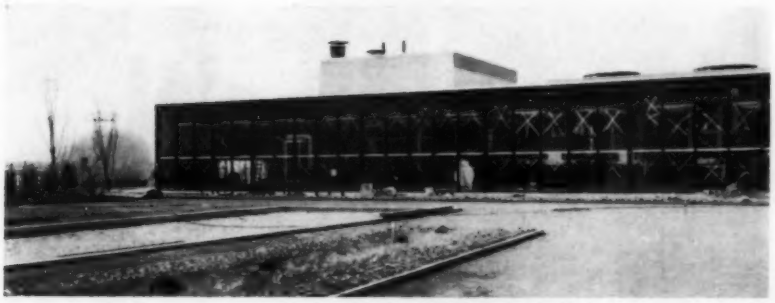
migration inspection services, and claim their baggage, all on the first floor.

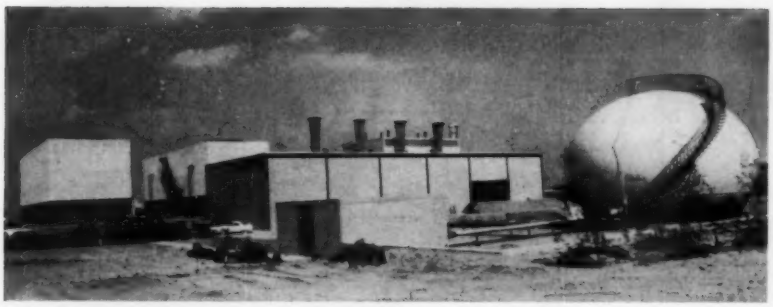
To reach ground transportation, overseas travelers will go through a short passageway into an exit lobby which designer Charles E. Hughes of Skidmore, Owings and Merrill's New York office characterizes as a "gateway to the United States." This curved structure, whose parabolic arch economically encloses a wide sweep of column-free space, is in sharp contrast with the long (11 blocks), low lines of the Arrival and Airline Wing Buildings, and the verticality of the 11-story control tower. It is framed with two 6-ft-deep plate girders which form a three-hinged parabolic arch 230 ft across and 46 ft high at the mid-point. Light steel trusses serve as intermediate stiffeners, and the whole is sheathed in stainless steel with standing seams following the curvature of the arch.

The steel framed Arrival and Wing Buildings are faced in a gray glazed brick, with panels of a bright yellow glazed brick relieving the expanse of glass along the front. The control tower, which will house electronic dispatching gear in addition to the control cab, is in aluminum and glass.

Fanning out in an oval from this "nerve center" are sites for the individual airline terminals — none of which are under way as yet. These will be linked with each other and with the arrival unit by a series of mutually related landscaped areas planned with the birds-eye view in mind. The roadways unwind concrete ribbons through colorful planting groups; huge reflecting pools mirror the sky; and lighting designer Abe H. Feder has thrown over the entire area "a blanket of never-ending daylight" that promises a nightscape as exciting as the daytime aspect of the giant complex. The roadways are lit by the graceful "lyres" shown above left; the parking lots and intervening spaces by 43 three-legged towers located on approximately 320-ft centers. Atop these 75-ft pylons are mounted 1500-watt mercury quartz vapor flood lamps in clusters of six, eight, ten or twelve. This system is flexible enough to provide uniform coverage in some areas, highlights in others, with the maintained level of illumination varying from 1.5 to 5 foot-candles. The brightness ratio is less than 3½:1.

The indoor climate of the entire ter-



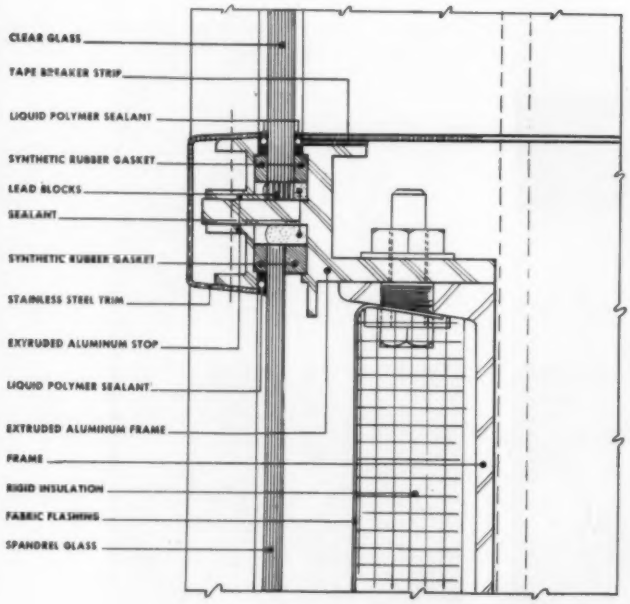


The largest combined system of high temperature water heating and absorption cooling installed to date will carry hot water for heating and chilled water for cooling to campus-type passenger facilities at New York's Terminal City. Equipment is housed in the single-story steel and masonry structure shown above, its inner workings — and rainbow-painted service lines — bared to the public by a glass wall

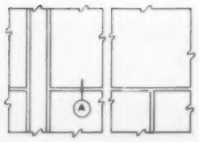
minal area will be controlled at a central heating and refrigeration plant from which a sprawling network involving some ten miles of pipe will feed hot water for heating and chilled water for cooling to the individual buildings — freeing them of such space-consuming and/or architecturally unattractive mechanical paraphernalia as boiler and equipment rooms, cooling towers and smokestacks. According to engineers Seelye, Stevenson, Value and Knecht, the system is the most extensive use to date of high temperature water for combined heating and absorption cooling. Capacity is 160,000,000 Btuh for heating and 7500 tons for cooling.

To house the primary equipment Skidmore, Owings and Merrill have designed an L-shaped showcase in which light gray glazed brick and exposed black-painted steel form a muted setting for the colorful innards of the plant. Four generators, with auxiliaries and expansion drains, are housed in the wings; the nine absorption units march in double file behind a glass wall at the front of the building. Themselves a chaste white, the units are wrapped in a maze of brightly painted pipes whose colors reveal their contents — blue for condenser water, green for chilled water, red for hot water and orange for electrical conduit. Behind the building are two cooling towers framed in redwood and faced with transite siding, and the group is completed by a 5000 barrel capacity Horton (elliptical) spheroid tank opposite the boiler wing.

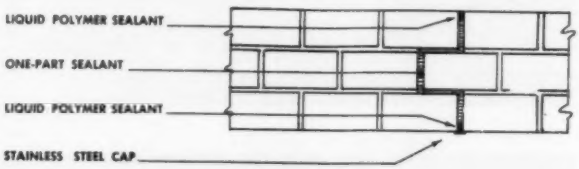
(More Roundup on page 254)



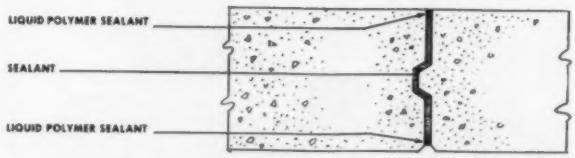
Glass Curtain Wall Sealing System (Section A)



Key Elevation for Section "A" left



Expansion Joint in Brick Wall



Expansion Joint in Concrete Wall

New Glazing, Caulking Problems Call For New-Style Sealants

As curtain wall construction and oversized windows multiply the stresses placed on glazing and caulking compounds, the problems of protecting high-rise buildings against rain and weather approach those encountered in sealing aircraft — and the solution for the building field seems to lie in sealers borrowed from the aviation and marine industries.

Rubber compounds based on *Thiokol* liquid polymer, a polysulfide synthetic rubber, have been used as sealers and for caulking in aircraft and ships since 1945, and are now being used to meet the increasingly stringent sealing requirements of today's skyscrapers. When mixed with curing agents, the compounds cure at air temperatures to a rubber resilient enough to absorb strains caused by normal expansion, contraction or vibration of a structure without cracking or allowing the entry of moisture, and adhesive enough to cling permanently to a wide variety of building materials — including glass, metal, wood and masonry. Unlike most rubbers, the *Thiokol* liquid polymer is not affected by exposure to oxygen or ozone, and resists attack by oils, solvents or corrosive atmospheres. Properly formulated compounds will develop the handling characteristics and properties listed in the table below, although any given compound may display some variation within this range of properties, depending on the specific ingredients employed in its manufacture. Differences in the compounds are usually determined by what a manufacturer feels to be the best formulation for a particular type of application. For example, an expansion joint subject to heavy traffic would require a harder compound than would be used to seal a large expanse of glass where cushioning might be the major problem.

All of the *Thiokol*-based compounds come as two-part mixes — one package containing the liquid synthetic-rubber base with fillers and other additives, and the other containing the curing agent. Reinforcing agents and fillers (carbon black, whiting, aluminum powder, zinc sulfide and titanium oxide in varying proportions and combinations) thicken the polymer so that the mixed compounds can, in many cases, be applied to vertical surfaces without flow. Other additives are used to regulate curing and to obtain the desired adhesive properties. These ingredients, in viscous paste form, are combined on the job with the curing agent — usually lead dioxide suspended in a small amount of plasticizer. After the two components have been thoroughly mixed together, they can be applied with conventional caulking guns. Preparatory work will depend on the type of material to which a compound is being applied. A clean dry surface is required for all applications, and on concrete or masonry a primer should be used to secure proper bonding. *Thiokol Chemical Corp., 780 N. Clinton Ave., Trenton 7, N. J.*

Properties of Thiokol Liquid Polymer Compounds

Available colors	Buff, gray, black, aluminum, white
Set time at 80°F	Approximately 4 hours
Time to complete cure at 80°F	24 to 48 hours
Ultimate tensile strength	150 to 600 psi[1]
Elongation at break	200 to 500 psi[1]
Shore A hardness	20 to 60[1]
Adhesion in shear	10 to 125 psi[1]
Adhesion in peel	20 to 40 lb per in.[1]
Water absorption	Less than 2 per cent[2]
Service temperature range	—65°F to 250°F

[1] *Tests conducted on specimens cured for 24 hours at 80°F and tested according to standard (ASTM) rubber evaluation procedures.*

[2] *After four days' immersion at 80°F*

(More Products on page 274

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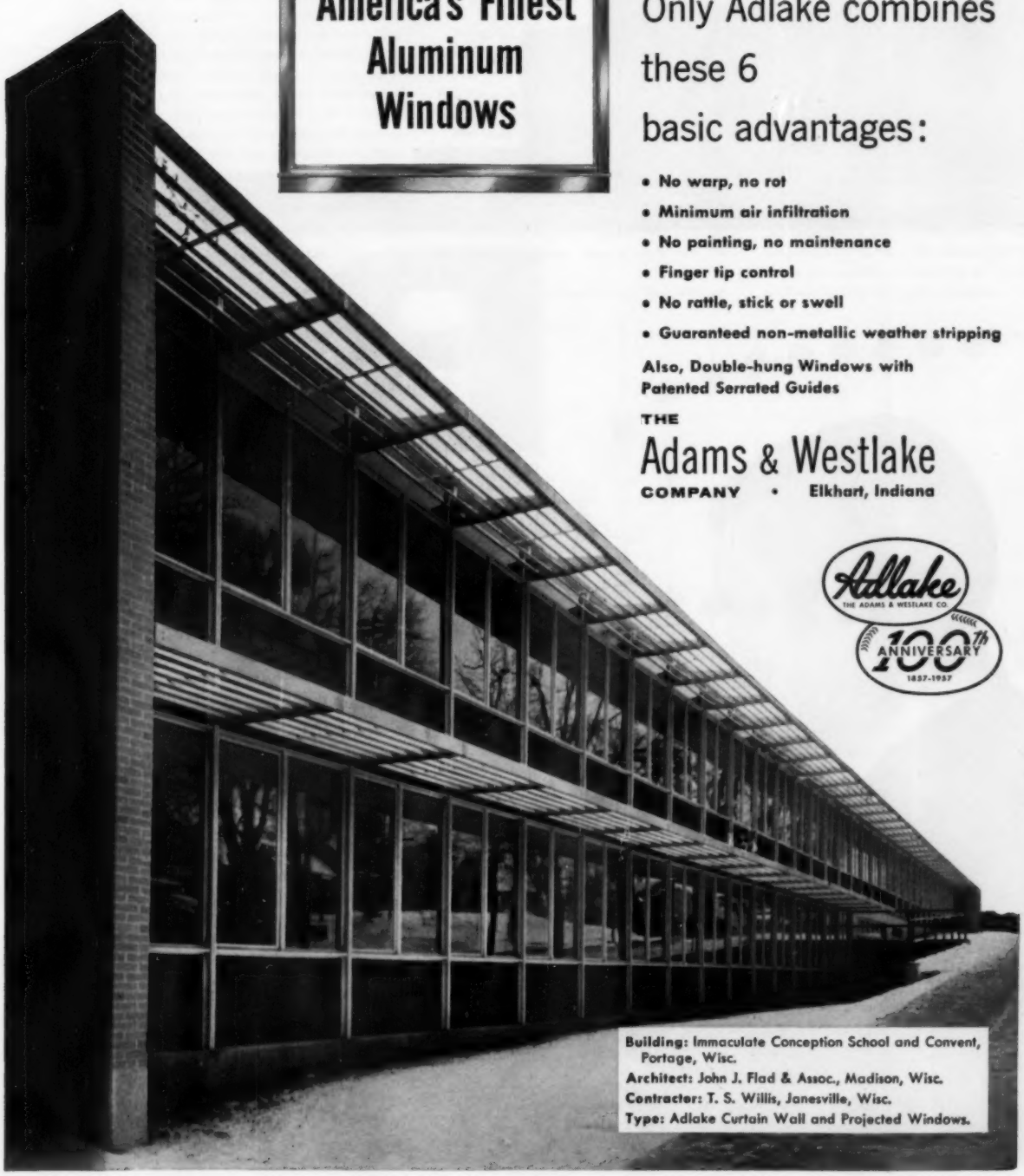

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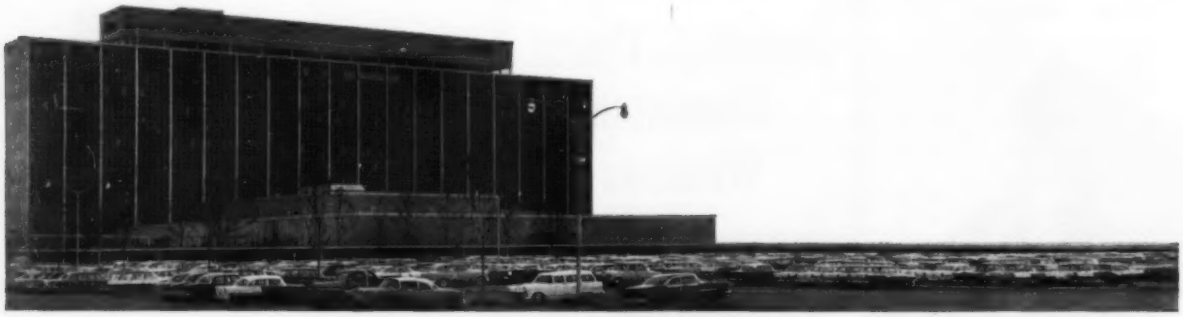

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RELATIVE AREA ENCLOSURE PROPERTIES OF PLANE SHAPES—1

By WILLIAM BLACKWELL

Geometry in architecture, sometimes boldly expressed and sometimes artfully concealed, is a part of the common core of knowledge and understanding which the architect uses to enclose space for human needs—one of his instruments, one of the tools, to be used in organizing and planning and decorating and integrating spaces so they can be built and understood and used. This study of some of the formal, basic series of geometric shapes which the architect uses, or may use, takes as its structure the unchanging relationship between the area and the perimeter of each shape.

Some shapes enclose an area with more or less perimeter than others, and this is a characteristic of the shape which can easily be expressed mathematically.

For example, the area enclosed by each unit of perimeter of a square is equal to the length of a side divided by four. The larger the square, the greater will be the area enclosed per unit of perimeter—the area/perimeter value. The same thing is true of a circle where the area enclosed per unit of circumference is equal to the diameter divided by four; and so the larger the circle, the greater will be the area/perimeter value. It is true also of any other shape that the larger it is the larger will be the area/perimeter value.

Because of this scale effect, because the area/perimeter value of all shapes changes with size in the same way, they have always the same relationship one to the other with respect to their area enclosure properties. For any given area then, the area/perimeter value of one shape can be expressed relative to the area/perimeter value of another shape.

Because a circle encloses a given area with less perimeter than any other closed shape, its area/perimeter value will always be greater—and so it is used here to express the relative area enclosure properties of other plane shapes. The area/perimeter value of a square, for instance, will always be 88.6 per cent of the area/perimeter value of a circle with the same area. This value is the area/perimeter factor, a comparison of the area enclosure properties of a square to those of a circle. Similar values can be found for other shapes, regular or irregular, by using the equation:

$$A_f = \frac{2\sqrt{\pi a}}{p} \times 100 \text{ or } \frac{354.5\sqrt{A}}{p}$$

Once the area/perimeter factor has been found for a shape, the process can be reversed and the area/perimeter factor used to find the actual area or perimeter of a shape if one or the other is known, providing a useful numerical relationship between the two similar to the 'k' and 'f' factors sometimes employed in handbooks to simplify calculations.

If the area is known, the perimeter can be found using the equation in this way:

$$p = \frac{2\sqrt{\pi A}}{A_f/100} \text{ or } \frac{354.5\sqrt{A}}{A_f}$$

If the perimeter is known, the area can be found by the equation:

$$A = \frac{1}{4\pi}\left[\frac{A_f}{100} \times p\right]^2 \text{ or } .0796\left[\frac{A_f}{100} \times p\right]^2$$

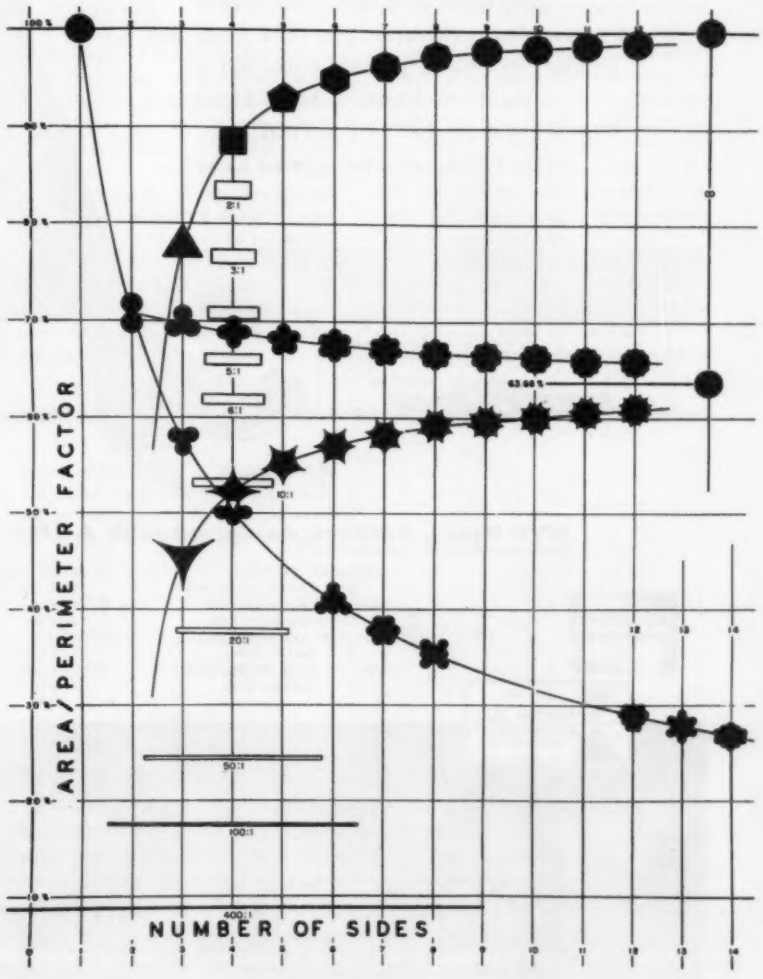
For circles, squares or rectangles finding the area or perimeter isn't a very serious problem but in the case of many sided polygons, ellipses or irregular shapes, the area/perimeter factor can be useful.

The reciprocal of the area/perimeter factor can also be used to express the difference in the area enclosure properties of a shape and a circle. A square has a perimeter/area value of 1.128 (100/88.6) compared to a circle of 1, which is to say that a square has 12.8 per cent more perimeter than a circle with the same area.

It might be emphasized, too, that although the area/perimeter factor is independent of "the scale effect" and is an unchanging factor regardless of the size of the shape, it is nonetheless an expression of the relative area enclosure properties of shapes for a given area. A large square might have an actual area/perimeter value twice that of a small circle. The usefulness of the factor lies then only in comparing the area enclosure properties of shapes for a given area.

The chart below illustrates the relative area enclosure properties of four related series of geometric shapes. They are arranged from bottom to top according to their area/perimeter factors, from 0 to 100 per cent, and from left to right according to the number of sides in the shape, from one to infinity.

In outline form and starting with the square are also shown some rectangles of different proportion to illustrate the change that occurs in the area enclosure properties of rectangles as the length-to-width ratio changes.



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RELATIVE AREA ENCLOSURE PROPERTIES OF PLANE SHAPES—2

By WILLIAM BLACKWELL

The shapes on the chart all have the same area, so the difference in apparent size, as between one shape and another, can be seen.

The Regular Polygons

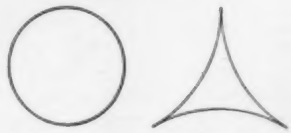
First of the four series of shapes shown in black on the chart is the regular straight-sided polygon series—the triangle, square, pentagon, etc. It begins, theoretically, with a straight line. Having two sides, a perimeter equal to twice its length but zero area, a straight line has an area/perimeter factor of 0 per cent. The first solid equilateral shape is the equilateral triangle (77.7 per cent), then a square (88.6 per cent), the five-sided pentagon (93 per cent) and so on—gradually approaching a circle (100 per cent) as the number of sides increases to infinity. Area/perimeter factors for some of the polygons in this series are given in the table below. The latter shapes in this series are extremely compact, with polygons of 13 sides or more having area/perimeter factors within 1 per cent of the area/perimeter factor of a circle.

In a limited sense, area/perimeter factors are a kind of efficiency factor, reflecting the degree of proximity of a shape to the area enclosure properties of a circle—as for instance, when a circular structure is divided into a number of straight sides for ease of fabrication.

Concave-Convex Series:

Under the regular polygons are two complimentary series of shapes, now seldom used, but still familiar to architects as the shapes of brightly colored rose windows and vertically lined, fluted columns. These are the concave and convex aspects of the straight-sided polygons. Actually, which is which depends on whether the point of view is from the outside or the inside but the upper curve, the "rose" shapes, are taken to be the convex series and the lower curve, the "fluted" shapes, the concave.

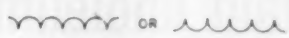
Of the shapes in these two series, the most interesting is the three-sided concave shape formed by the interior arcs of three mutually tangent circles. It might be called a "triarc." This shape has an area/perimeter factor of 45.2 per cent, the lowest of the regular geometric shapes. Although actually having the same area, it appears larger than any other shape on the chart. The circle and the "triarc" represent two extremes in area enclosure—the one with minimum and the other with maximum perimeter for a given area in a regular shape. Because of this difference (a 55 per cent difference in area/perimeter factors) and because of their opposite curvature, the two together form a very strong contrast in shape.



CIRCLE 100%

"TRIARC" 45.2%

As the number of arcs in the circumference of both the concave and convex shapes increases, they converge on what appears to be a circle. Theoretically, it is a circle with its circumference made up of a very large number of very small arcs. With the area of each shape the same as it is on the chart, the arcs in the circumference become smaller as more are added. Finally, they are no longer apparent—the shape appears to be a circle. The actual circumference, greatly enlarged, would appear to be a line of semi-circles, like a series of arches, turned outward for the convex shapes, inward for the concave:



Because of the small arcs, the circumference is 1.57 times longer than the circumference would be without them. The area/perimeter factor of the shape then is 1.157 or 63.66 per cent.

REGULAR POLYGON SERIES:

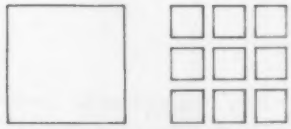
No. of Sides	Area/Perimeter Factor	No. of Sides	Area/Perimeter Factor
3	77.756%	20	99.587
4	88.623	24	99.714
5	92.995	25	99.736
6	95.231	27	99.774
8	97.368	30	99.817
9	97.931	32	99.839
10	98.330	36	99.872
12	98.846	40	99.897
15	99.264	45	99.920
16	99.354	48	99.929
18	99.490	50	99.934

The Area/Perimeter Factor For Any Number of Separate Identical Shapes:

Beginning with one circle at the upper left-hand corner of the chart is a curve showing the area/perimeter factor for various groups containing different numbers of circles. The groups shown were arrived at by starting with one, two or three circles at the center and proceeding outward, adding circles in the vacant pockets of each concentric ring. The same number of circles might, however, have been arranged in any other manner or even randomly placed and still have the same area/perimeter factor. Providing they all are of the same size, only the number of circles considered determines the area/perimeter factor.

The area/perimeter factor of any number of separate circles of the same size is equal to the area/perimeter factor of one circle (100 per cent) divided by the square root of the number of circles considered. And, it happens that this is true of other shapes: the area/perimeter factor of any number of separate, identical shapes taken as a whole is equal to the area/perimeter factor of one of the shapes divided by the square root of the number of shapes. One square has an area/perimeter factor of 88.6 per cent; nine squares, 29.5 per cent (88.6/3). A single leaf on a tree might have an area/perimeter factor of say 50 per cent, but if all the leaves are counted they would as a whole have an area/perimeter factor of very nearly zero.

The curve showing the area/perimeter factor for groups containing a different number of circles, then, illustrates what happens to the area/perimeter factor of any shape when it is divided into a number of separate identical shapes.

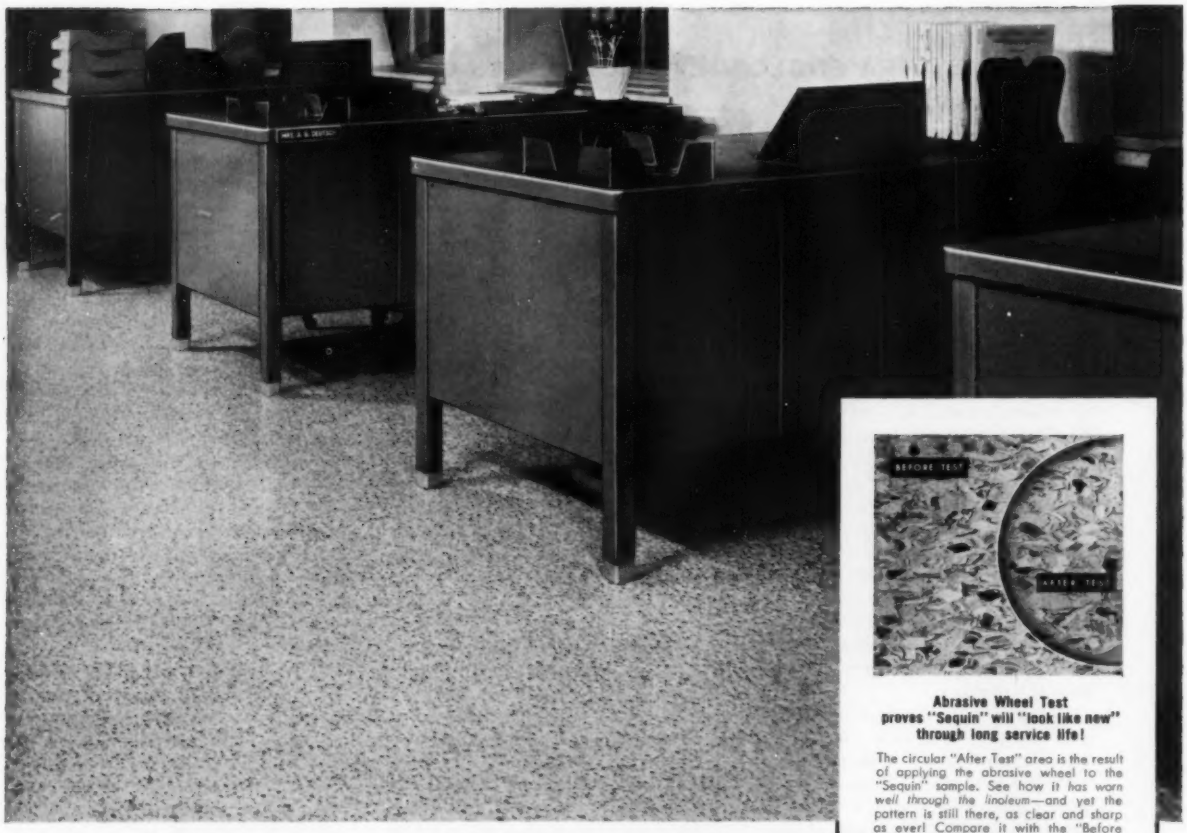


ONE SQUARE 88.62%

NINE SQUARES 29.54%

Instead of being arranged in their more compact form as they are on the chart, the same number of circles might have been arranged in a ring, adjacent to one another and equidistant from the center, as illustrated on page 251.

Lines between the centers (or the points of tangency) of adjacent circles form the regular straight-sided polygon series—the pentagon



New Jersey Bell Telephone Company uses rugged "Sequin" in its busy new office in Glen Ridge. This beautiful floor provides quiet comfort underfoot and outstanding wear resistance.

Abrasive Wheel Test proves "Sequin" will "look like new" through long service life!

The circular "After Test" area is the result of applying the abrasive wheel to the "Sequin" sample. See how it has worn well through the linoleum—and yet the pattern is still there, as clear and sharp as ever! Compare it with the "Before Test" area. You can't tell the difference! For information, write to Architects Service Dept., Congoleum-Nairn Inc., Kearny, N. J.

Telephone Company uses Gold Seal® 1/8" Sequin® inlaid linoleum in its new office in Glen Ridge, N. J.

Any busy telephone office needs a long-wearing floor that's easy and inexpensive to maintain. New Jersey Bell Telephone Company has installed Gold Seal 1/8" "Sequin" Inlaid Linoleum.

"Sequin" gives your busiest industrial or institutional clients modern, textured floor beauty plus the traditionally low maintenance of Gold Seal Inlaid Linoleum. Stains, grease, grime wipe easily away. And tough, resilient "Sequin" provides quiet comfort underfoot . . . resists indentation . . . defies years of punishing traffic.

In addition to "Sequin," Gold Seal offers you a whole family of inlaid linoleum and resilient tile flooring materials—each with its own special uses and advantages. All are designed to please the most exacting client.

SPECIFICATIONS—1/8" "Sequin" linoleum 6' wide yard goods, 9" x 9" tile 1/8" gauge, burlap-backed. Install over suspended wood or suspended concrete subfloors (even over radiant heat). Available in: grey, green, dark brown, white multi, grey mix, taupe, beige and white with black. Also made in standard gauge for residential use—in 18 colors.

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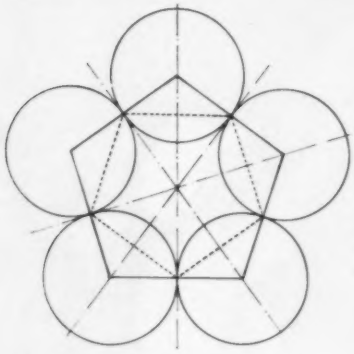
RELATIVE AREA ENCLOSURE PROPERTIES OF PLANE SHAPES—3

By WILLIAM BLACKWELL

in the illustration. The exterior perimeter of the whole form is the convex aspect of the polygon and the interior perimeter of the circles the concave. The circles themselves, the regular polygon and its concave and convex aspects make up the four series of shapes shown in black on the chart.



Rectangles:

In outline form, and starting with the square in the regular polygon series are some rectangles, the shapes most frequently used by architects because of the ease with which they accommodate most needs for enclosed space. The area/perimeter factor of a rectangle is determined simply by the length-to-width ratio, the proportion. A square (1:1) has the highest factor, 88.6 per cent, and the farther the rectangle deviates from the square in proportion, the lower will be its area/perimeter factor. As the length becomes very great with respect to the width, the "width" disappears, leaving a straight line with an area/perimeter factor of 0 per cent. It is possible then for a rectangle, depending on its proportion, to have any area/perimeter factor from 0 to 88.6 per cent.

The greatest difference in the area/perimeter factors of two closed shapes is, of course, 100 per cent—reached between a straight line and a circle and approached between a circle and a very long rectangle. There is one example of this contrast, used architecturally to a softer degree, in the chapel Saarinen designed for M.I.T. Here one enters the dimly-lighted, circular brick chapel through a lightly enclosed rectangular passageway. Between the high area/perimeter factor of the circle and the lower factor of the rectangular entry, there is a difference of about 25 per cent. Looking at the chart and the range of shapes normally used architecturally, this is a very considerable difference.

Room shapes, for instance, are normally nearly square in plan, with length-to-width ratios from 1:1 to about 1½:1; seldom greater than 2:1. The difference in the area/perimeter factor of a square room and one with a relatively high length-to-width ratio of 2:1 is only about 5 per cent.

Building shapes, especially low buildings, cover virtually the whole range of rectangles, from squares to the mile-long production line enclosures of the Second World War. "L" and "T" and other arrangements are equivalent to relatively long rectangles. Because they have lower area/perimeter factors (more perimeter) they have also a higher degree of light and openness and flexibility in the arrangement and rearrangement of the internal spaces than the more compact shapes.

On the other hand, economy of exterior perimeter is an important consideration in almost every building, too, because of material and labor saving, maintenance costs, and reduction in heating and cooling loads. It is particularly important in multistory buildings where the outside wall surface is very large compared to the roof area. These buildings tend to have more compact shapes, with the perimeter reduced just to the point where if it were reduced further the spaces within would be adversely affected. To give one example, the glass-enclosed rectangles of Lever House have a length-to-width ratio of about 3:1 and an area/perimeter factor of 77.5 per cent. A square plan (88.6 per cent) might have been more economical in terms of the perimeter but would not have the same degree of light and openness and planning flexibility (and interest, too) that the rectangular shape has with some additional perimeter.

As a matter of interest, the "golden section" (1.62:1) has an area/perimeter factor of 86.12 per cent, 2½ per cent less than a square. The area/perimeter factor for other rectangles can be found by using the equation

$$A_f = \frac{\sqrt{\pi 1/w}}{1 + 1/w} \times 100$$

or taken directly from the curve below.

THE "GOLDEN" SECTION
86.12%

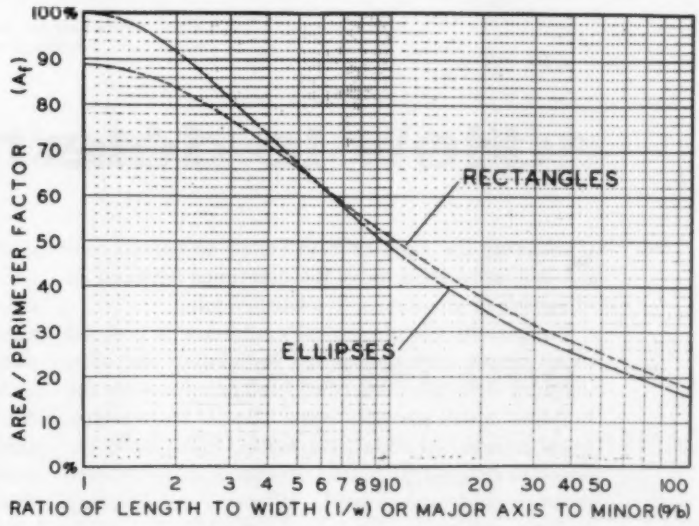
Ellipses:

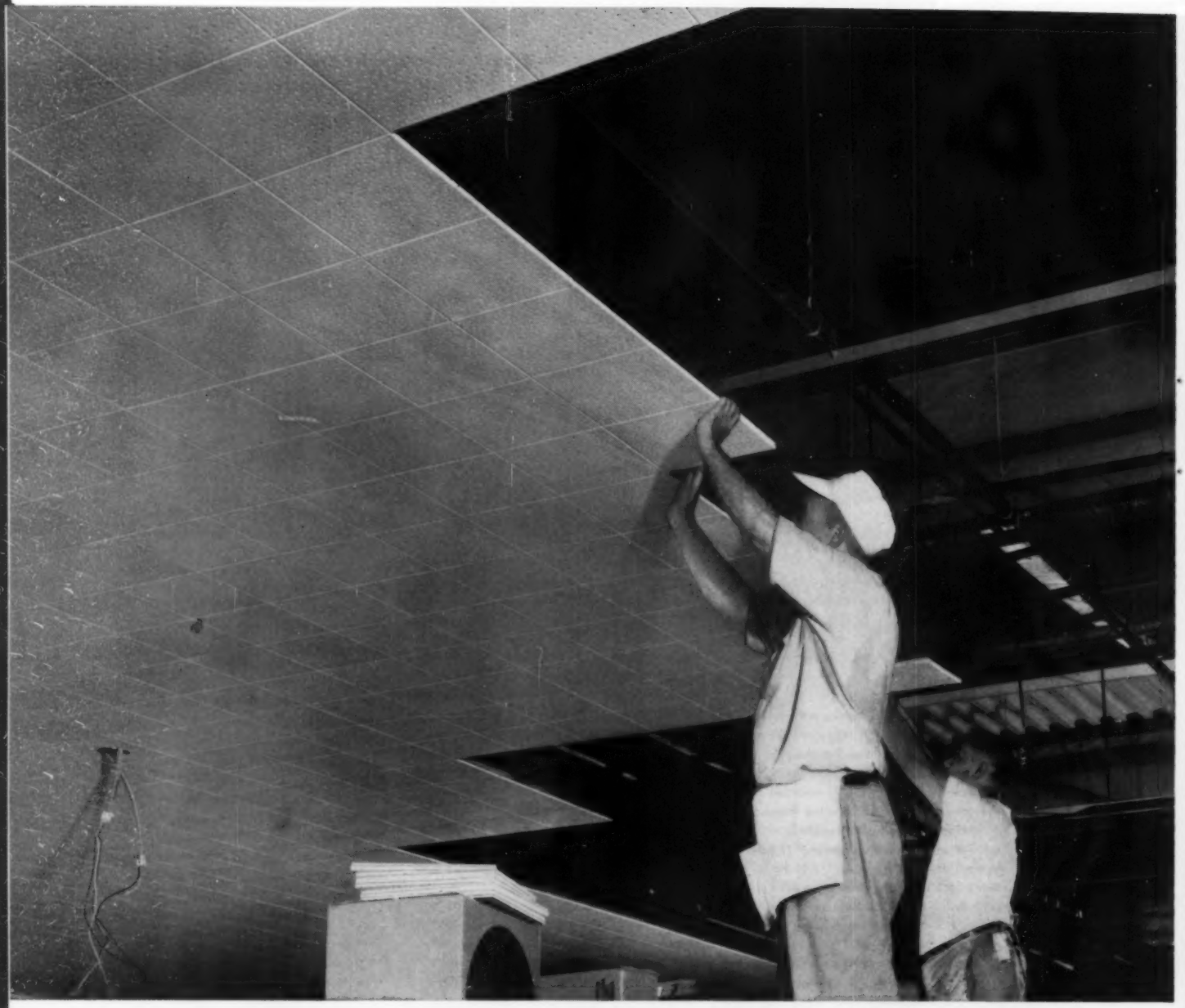
On the same graph with the rectangle curve is another curve showing the area/perimeter factor for ellipses of different proportion. In the same manner as the rectangles, ellipses have lower and lower area/perimeter factors the further they deviate from a circle in proportion. It happens that for proportions less than about 5.75:1 ellipses have higher area/perimeter factors than rectangles of the same proportion but for proportions greater than 5.75:1 rectangles have the higher factors. With a length-to-width ratio of 5.75:1, both have an area/perimeter factor of 62.98 per cent.

When the major and minor axis of an ellipse are known, the area can be found using the equation, π ab. The circumference can then be found by taking the approximate area/perimeter factor from the curve and using the basic equation:

$$p = \frac{2\sqrt{\pi A}}{A_f/100}$$

This will be as accurate as the area/perimeter factor can be read from the curve, plotted from tabulated values of elliptic integrals.





These mechanics are installing an Armstrong Minatone Ceiling under ideal job conditions. Electrical work has been located, and the building is thoroughly dry.

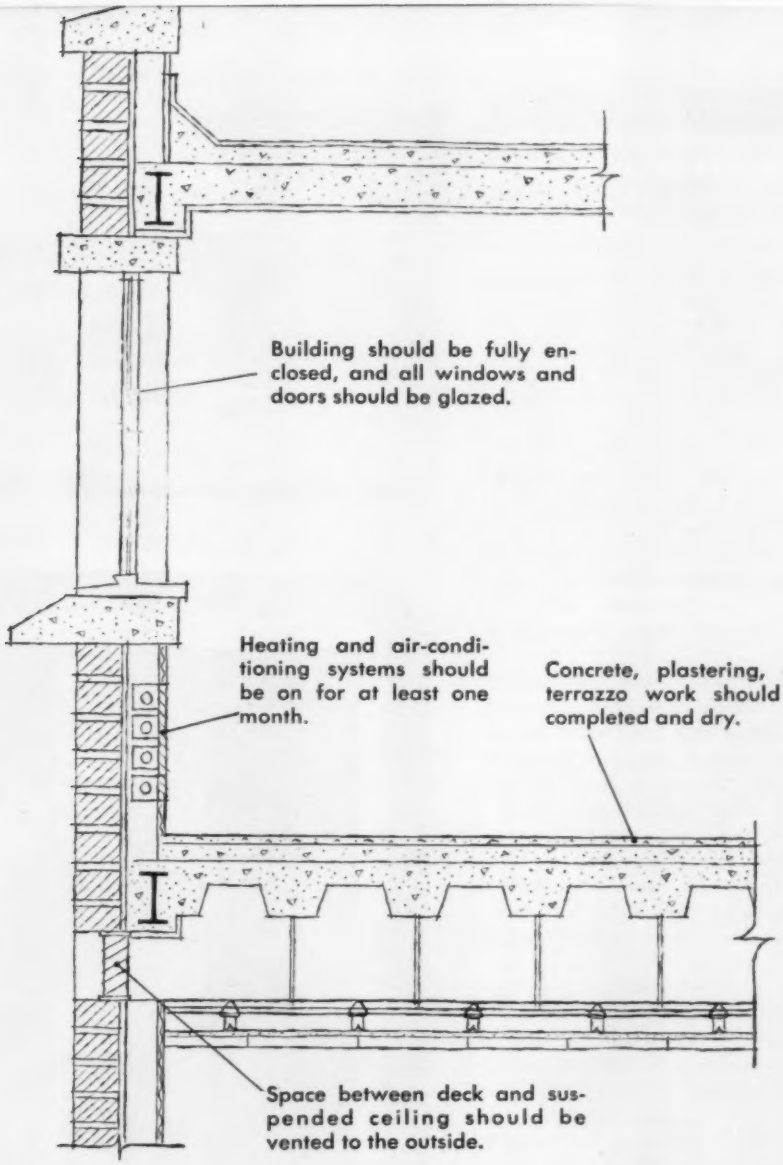
How to determine when to

Selecting the right time to install acoustical ceilings may often mean the difference between an attractive or an unattractive finished job.

Frequently, the acoustical contractor is ordered to go ahead with the ceiling installation just after masonry work has been completed or even while the building is still partially open. Under these conditions, mineral or fiber composition tile that is exposed to excessively humid conditions absorbs some moisture and may expand. When air conditioning or heating is turned on to make the building ready for occupancy, a great deal of the moisture is removed from the interior. This change in humidity conditions may cause tiles to contract and result in an unsatisfactory appearance.

The Acoustical Materials Association considers acoustical ceilings to be in the same category as other fine interior finish materials. They recommend that the ceilings be installed under the same interior conditions that will exist when the building is occupied.

According to the Acoustical Materials Association, the best time to install acoustical ceilings is after the building is fully enclosed and the heating or air-conditioning system has been in operation for at least one month. All "wet operations" such as plastering, concrete, and terrazzo work should be complete and dry. Windows and doors should be in and glazed. If the acoustical ceiling is suspended from floor slabs or roof deck, the space between the deck or slab and the ceiling should be vented to the outside. And, for


Building should be fully enclosed, and all windows and doors should be glazed.
Heating and air-conditioning systems should be on for at least one month.
Concrete, plastering, and terrazzo work should be completed and dry.
Space between deck and suspended ceiling should be vented to the outside.

begin acoustical installation

best results, acoustical materials should be delivered to the job just prior to installation.

To assure the most satisfactory results from the standpoint of appearance and acoustical efficiency, most architects insist that acoustical ceiling installations rigidly comply with these basic job conditions.

For detailed information on recommended installation procedures or data on any of the complete line of Armstrong Acoustical Ceilings, see your Armstrong Acoustical Contractor. He'll be glad to assist you with any ceiling problem. You'll find him listed in the Yellow Pages of your phone directory.

For a free, illustrated booklet on the latest sound-conditioning methods and materials, write to Armstrong Cork Company, 4209 Rock St., Lancaster, Pa.

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(Continued from page 243)

CEMENT COMPANY'S OFFICE DISPLAYS CONCRETE WARES

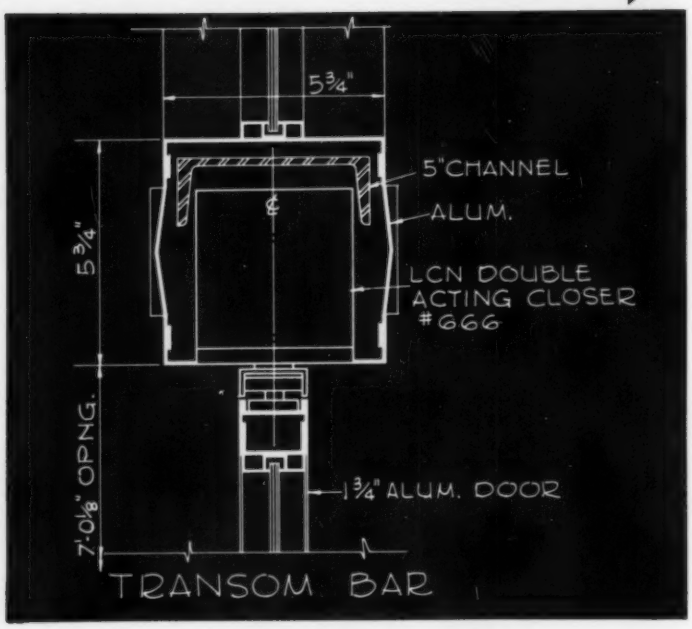
Disproving the old adage about the ill-shod condition of the shoemaker's children, the Medusa Portland Cement Company has put its recently completed National Headquarters Building in Cleveland Heights, Ohio, to work as a showcase for architectural concrete.

Curved to follow the contour of the boulevard on which it fronts, the two story structure designed by architect Ernest Payer consists primarily of two office wings flanking a central lobby which extends the full height of the building. Executive offices are housed in a roof-level penthouse, and a one-story basement annex completes the plan.

To make the curved shape possible without adding appreciably to the cost, the building was constructed by the lift slab method, with the 10 in. flat plates for the second floor and roof hoisted around columns made up of 8 in. angles welded to form box sections. The roof slabs cantilevered over the column-free lobby were later filled in with poured-in-place strips, and beams were up-set to carry the extra weight of the penthouse.

The use of concrete is more evident in an exterior curtain wall composed of double precast panels with a foam glass core sandwiched between an inner layer of white cement and an outer layer of concrete with a green aggregate. The panels, which are suspended vertically from the cantilevered slabs by heavy steel angle connections, are given wind stability by their final connection to the structural aluminum grid that completes the exterior wall construction. Two stories high and two panels wide, the grid sections are prefabricated with heads and sills shop welded. End walls of the building are of bevel-edged three inch solid concrete panels with an exposed white marble aggregate, while

(More Roundup on page 258)



CONSTRUCTION DETAILS

for LCN Overhead Concealed Door Closer Shown on Opposite Page

The LCN Series 644-666 Closer's Main Points:

1. Flap-free control for double-acting doors
2. Handles exterior doors of normal height up to 3'6" wide; interior doors to 4'0"
3. Power applied by a lever arm; in-swing and out-swing are adjustable separately
4. Used for wood, metal or tempered glass doors having top members 1¾" thick or more
5. Pivots included. Hydraulic back-check. No special threshold needed.

Complete Catalog on Request—No Obligation or See Sweet's 1957, Sec. 18e/La

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Canada: Lift Lock Hardware Industries, Ltd., Peterborough, Ontario

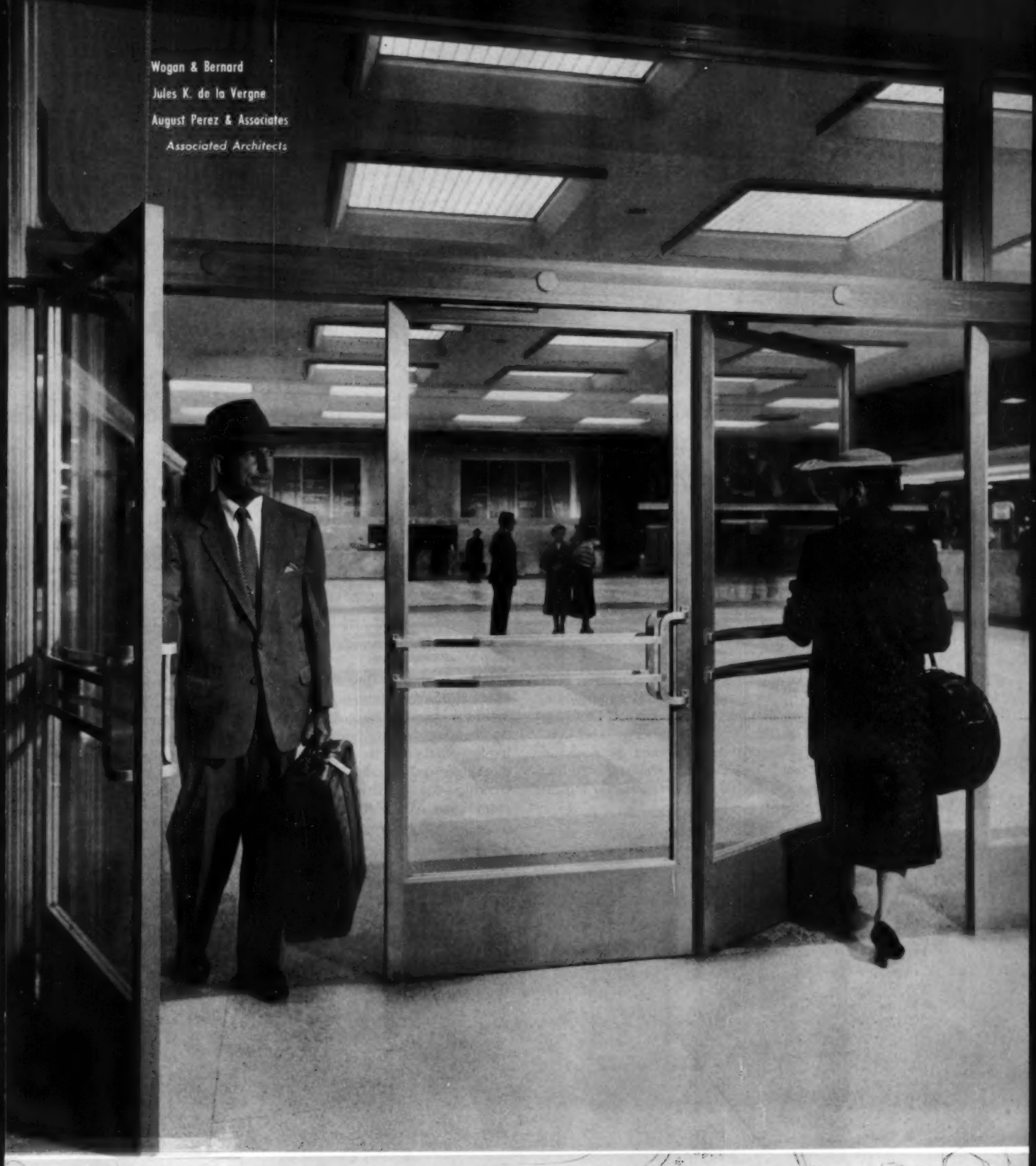
MODERN DOOR CONTROL BY *LCN* · CLOSERS CONCEALED IN HEAD FRAME

UNION PASSENGER TERMINAL, NEW ORLEANS, LOUISIANA

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Construction Details on Opposite Page

Wogan & Bernard
Jules K. de la Vergne
August Perez & Associates
Associated Architects



Ray Stuermer, A.I.A., Chicago

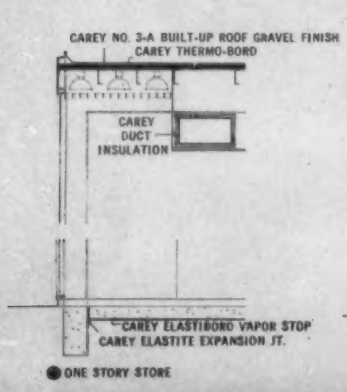
Ray Stuermer, A. I. A., designs an . . .

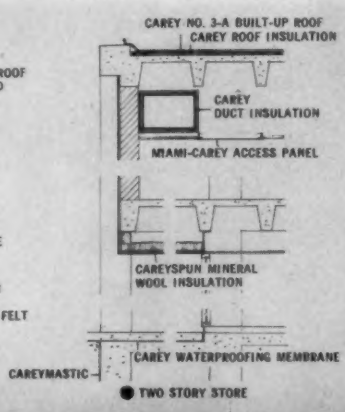
associated builders'

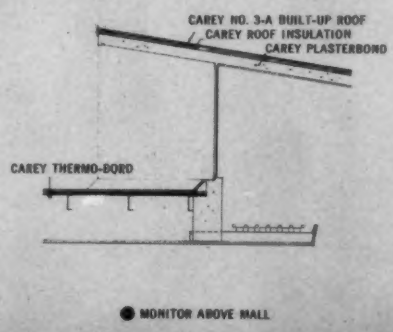
. . . a project originated

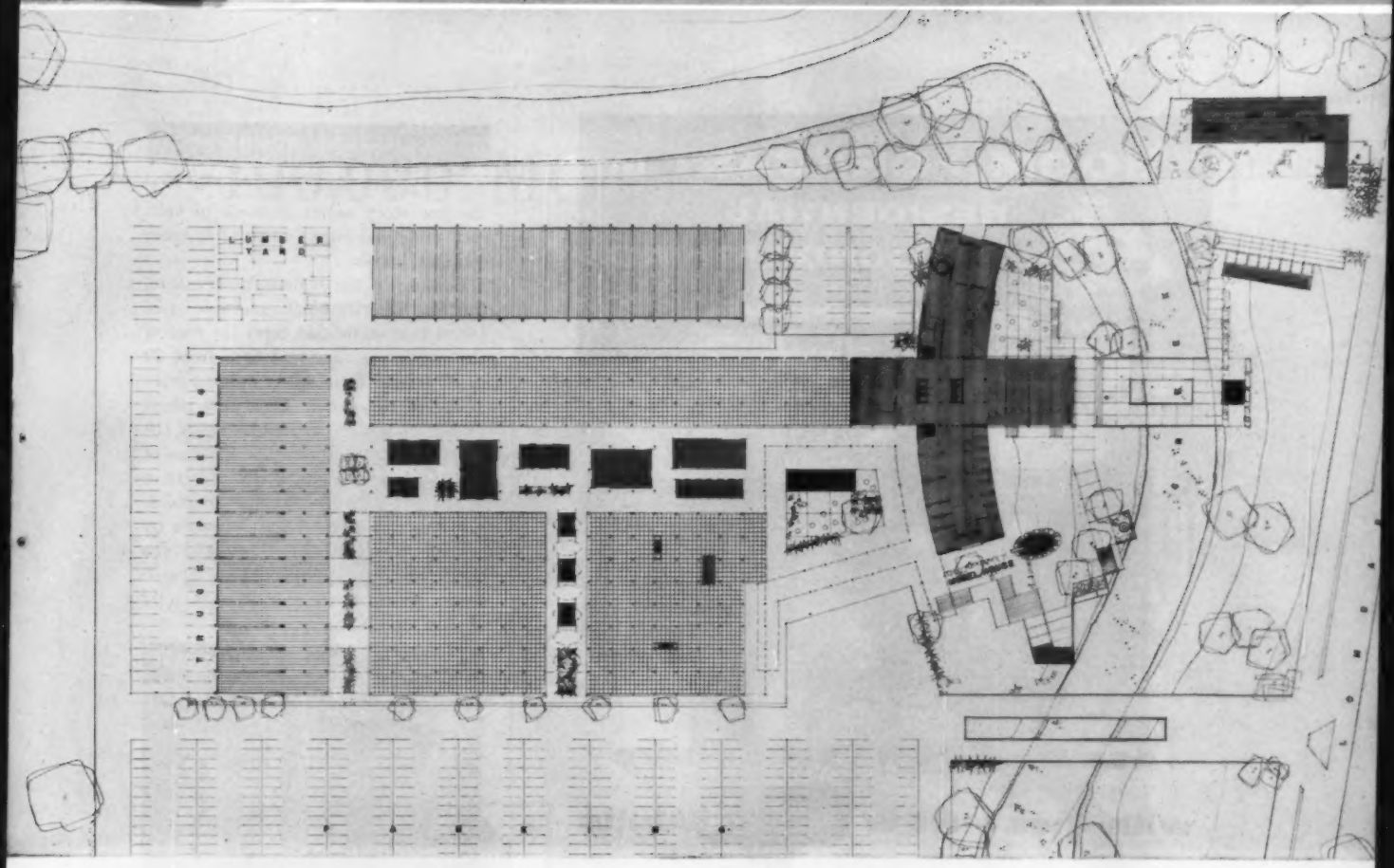
The concept of supermarketing in the light construction field was first proposed in 1955 by Arthur Bohnen, Chicago builder, land developer, and construction materials specialist. Drawing on his wide background in the design, financing, and construction of residential property, Mr. Bohnen proposed a "shopping-center for homes"—a place to which the public could bring all its building and remodeling problems for logical and practical answers.

Chicago architect Ray Stuermer has interpreted this concept in his design for AN ASSOCIATED BUILDERS' CENTER. The project includes stores, offices, display space, facilities for architects, builders, materials suppliers, land developers, mortgage bankers, title and insurance specialists; areas are provided for meeting rooms, model homes, exhibition hall and auditorium, parking—for "centralized responsibility from land to landscape", as Mr. Bohnen expresses it.







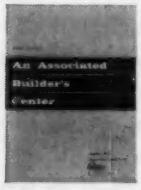


Arthur Bohnen, Developer, Chicago

center

by Arthur Bohnen

Because such a project provides so many interesting design and product application opportunities, Carey commissioned Mr. Stuermer to adapt some of his original design ideas to show how Carey Building Products could be used in constructing a shopping-center for homes.



Architect Ray Stuermer's plan and detail sheets are available to architects and builders. Ask your Carey representative or write The Philip Carey Mfg. Company, Lockland, Cincinnati 15, Ohio, Dept. AR-97.

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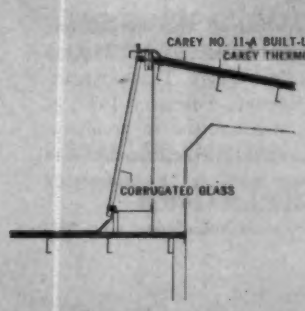
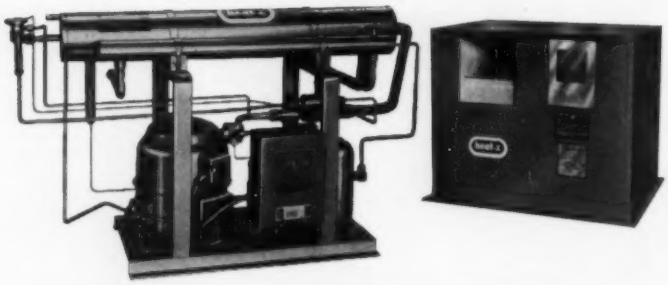


● WAREHOUSE CLERESTORY

● MODEL HOUSE



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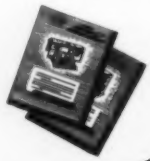
High efficiency patented Inner-Fin® construction of chillers, superheaters and condensers makes these the most compact units on the market. All water passages are of non-ferrous construction, eliminating corrosion problems.

Don't be left behind in the coming residential air conditioning boom. Write today for complete data on 'RPC' and 'ARPC' units.

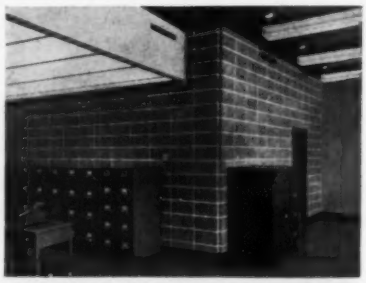


HEAT-X, Inc.
A Subsidiary of Dunham-Bush, Inc.
BREWSTER • NEW YORK

(Continued from page 254)

the one story annex is made of split rock units and large (up to 17 ft long) concrete panels.

Because of the building's curvature, the four 3½ in. thick, multiple span barrel thin shells that form the roof of the penthouse vary in length from 29 to 37 ft and have spans ranging from 12 ft-3 in. to 5 ft-6 in. Their axes, which diverge to match the radial lines of the building, are tipped so that the tops of the shells are higher at one end than at the other. At the front of the building, their horizontal thrust is taken by poured concrete ribs, integral with the shells, but dropped down to act as stiffeners or fins. At the rear, it is taken by shallow up-set concrete arches.



The extensive use of concrete on the exterior is matched on the interior, where walls of colored concrete block are supplemented by precast panels of various kinds, including the sculptured panels used on the lobby wall shown. The open staircase leading to the second floor balcony is also of concrete, with solid terrazzo treads cantilevering from both sides of a single precast stringer.

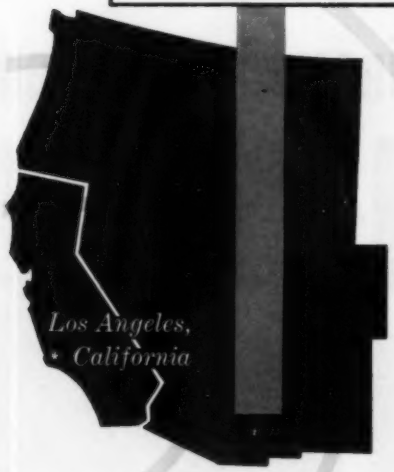
ADDENDUM

In the discussion of the steel frame foundation used for the Paul F. Watson residence in Fort Worth, Texas (ARCHITECTURAL RECORD, February 1957, p. 266), credit was omitted to architect-engineer Morris B. Parker, who designed both the house itself and the underlying foundation system.

(More Roundup on page 262)

100,000 MORE SQUARE FEET

...for Sunbeam Lighting

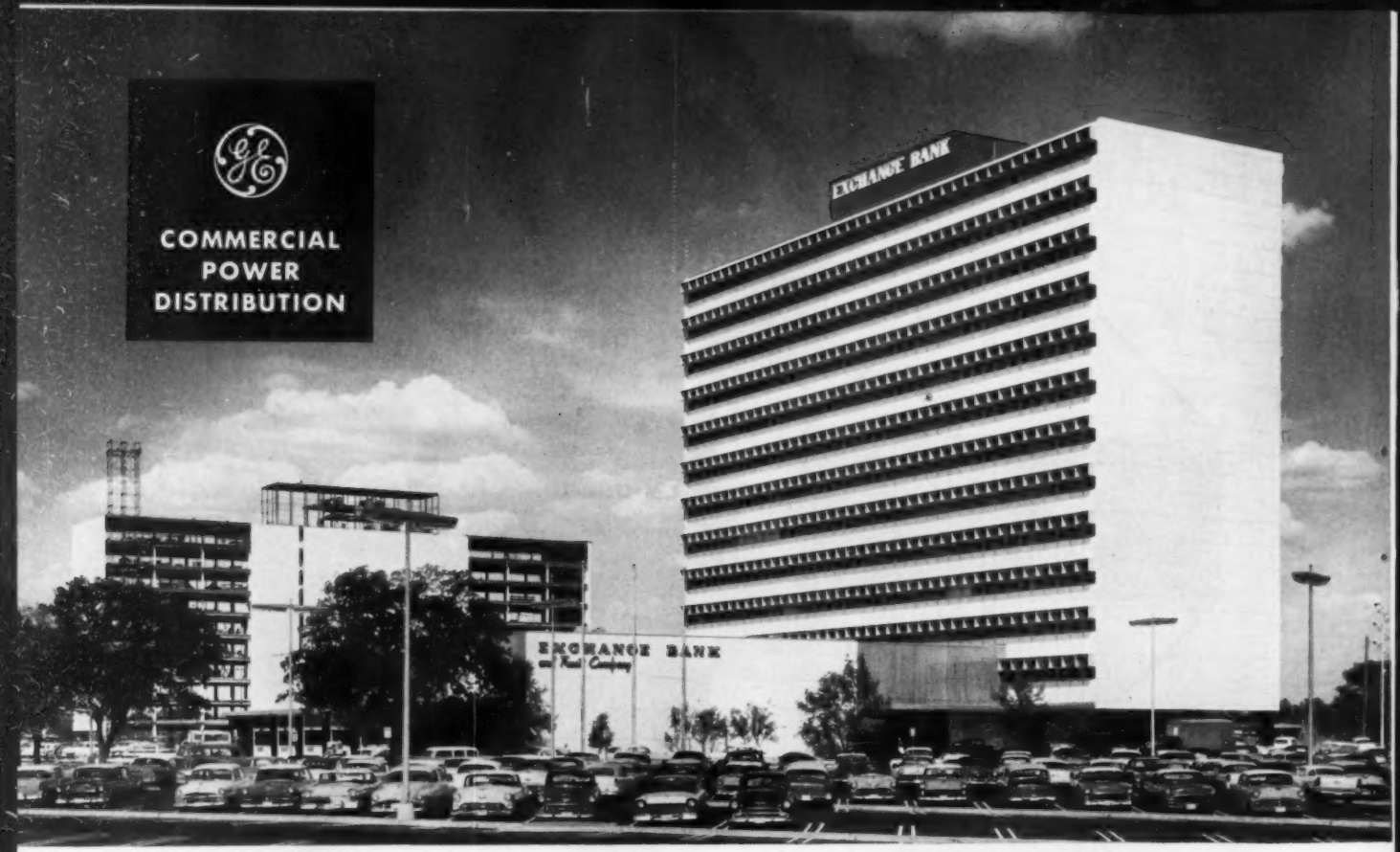


SUNBEAM LIGHTING COMPANY
is proud to announce
a new 4½-acre manufacturing plant, Gary, Indiana:
SUNBEAM LIGHTING CO., INC.,
On-the-spot service to 37 Eastern States for
so-often-specified Visionaire lighting products!

SUNBEAM LIGHTING COMPANY, 777 EAST FOURTEENTH PLACE, LOS ANGELES 21, CALIFORNIA

SUNBEAM LIGHTING CO., INC., 3840 GEORGIA STREET, GARY, INDIANA

COMMERCIAL
POWER
DISTRIBUTION



SAVINGS OF $90,000 were obtained using G-E 480Y/277-volt systems in Exchange Bank, Braniff Building in background.

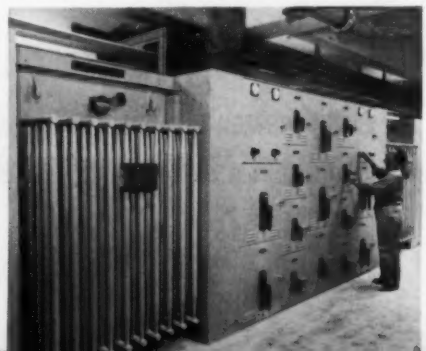
General Electric system-engineered equipment

PLANNING: W. Marshall, J. Glendinning, G-E; consultants J. M. Guerrero, E.B. Gamble; G.M. Bostock, Park V.P.

HIGH VOLTAGE LIGHTING at 277 volts creates savings by combining light, power source. Modular design permits flexibility.

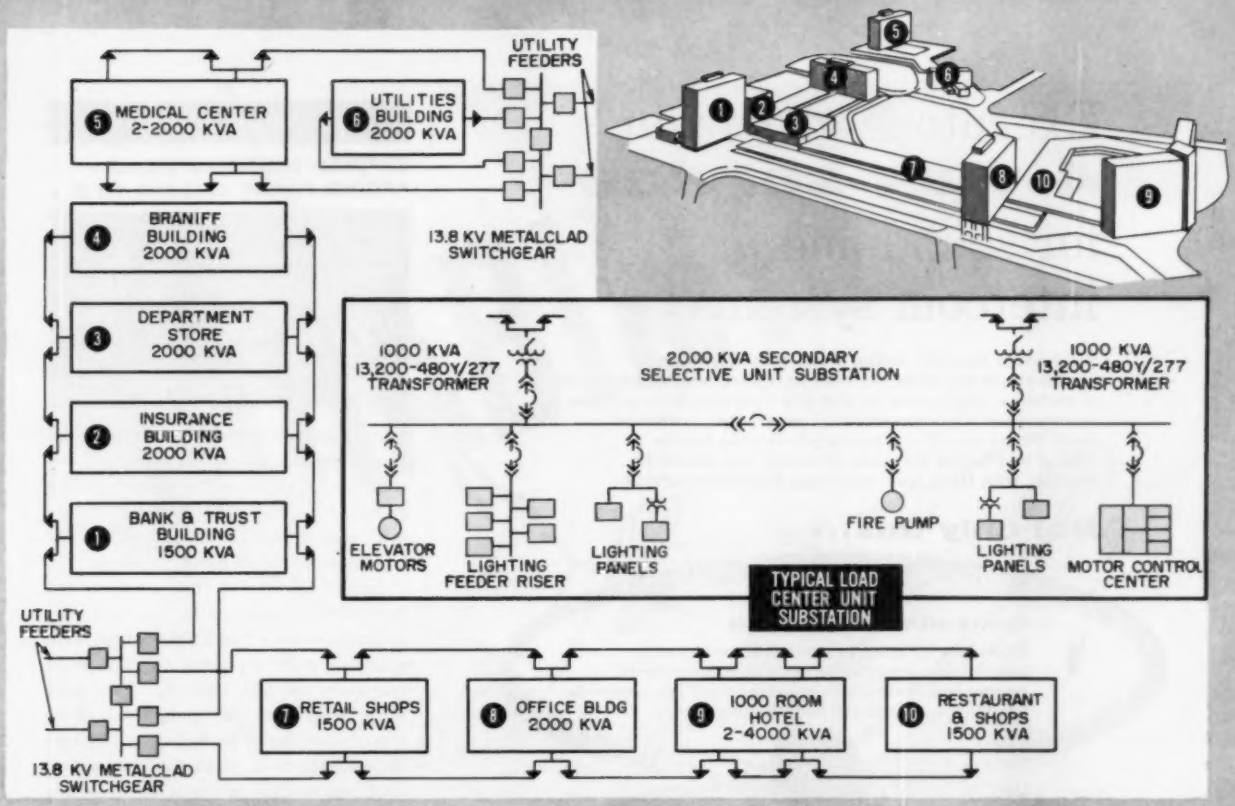
ECONOMICAL power distribution is provided by feeder busway. 30 kva, 110-V transformer serves office equipment.

COMPACT G-E Type DA7093 motor control center takes power from feeders to control all motors safely.



1500 KVA double-ended load center unit substation is typical of the units that will supply power in Exchange Park buildings.

PROJECT POWER is from two line-ups of G-E 13.8 kv metalclad switchgear. Unit shown is located in Bank basement.


UTILITY FEEDERS
5 MEDICAL CENTER 2-2000 KVA
6 UTILITIES BUILDING 2000 KVA
4 BRANIFF BUILDING 2000 KVA
13.8 KV METALCLAD SWITCHGEAR
3 DEPARTMENT STORE 2000 KVA
2 INSURANCE BUILDING 2000 KVA
1 BANK & TRUST BUILDING 1500 KVA
1000 KVA 13,200-480Y/277 TRANSFORMER
2000 KVA SECONDARY SELECTIVE UNIT SUBSTATION
1000 KVA 13,200-480Y/277 TRANSFORMER
ELEVATOR MOTORS
LIGHTING FEEDER RISER
LIGHTING PANELS
FIRE PUMP
LIGHTING PANELS
MOTOR CONTROL CENTER
TYPICAL LOAD CENTER UNIT SUBSTATION
UTILITY FEEDERS
7 RETAIL SHOPS 1500 KVA
8 OFFICE BLDG 2000 KVA
9 1000 ROOM HOTEL 2-4000 KVA
10 RESTAURANT & SHOPS 1500 KVA
13.8 KV METALCLAD SWITCHGEAR

FLEXIBLE, ECONOMICAL POWER distribution system for entire Park Project is contained in one-line diagram. Numbers key equipment to Project buildings. Completed Utility Building also uses General Electric 480Y/277-volt equipment.

serves power needs of "city within a city"

$125 million Exchange Park Project in Dallas shows how General Electric's "system approach" is key to flexible, economical commercial power distribution.

To keep pace with the Southwest's vigorous economic growth, a $125 million commercial center is rising on 120 acres four miles from downtown Dallas. Known as Exchange Park, this community represents one of the most advanced city-within-a-city developments yet attempted in the United States. It is scheduled for 1960 completion. Nine major buildings, parking for 15,000 cars, 40-foot-wide air conditioned malls, 150 retail shops, and other facilities will enable shoppers to take care of every personal and business need in scientific comfort. Already completed: Exchange Bank and Utility Building.

SELECTING THE BEST POWER DISTRIBUTION SYSTEM, to satisfy Exchange Park's heavy load concentration efficiently and economically, required thorough system analysis early in project planning. G-E engineers, working closely with Mr. George M. Bostock, Vice-president and Engineering Manager of Exchange Park and his consultants*, recommended a 480Y/277-volt secondary selective system as optimum. General Electric also provided basic system layout, service engineering and installation assistance at the site.

ADDED VALUES stem from adoption of G-E system recommendations. Exchange Park's 13.2 kv distribution system has capacity for load growth. Secondary selective system features permit reliable operation. Utilization of 480Y/277-volt system means fewer, less-metal circuits and substantial dollar savings. Using 480Y/277-volt equipment in only two of nine buildings, for example, saved $90,000.

GENERAL ELECTRIC SYSTEM ENGINEERING CAN HELP YOU on your construction project. Call on G-E engineers early in your planning when they can be of greatest value. Contact your nearest G-E Apparatus Sales Office or write General Electric Co., Section 680-12, Schenectady 5, N. Y.

*Architect: Lane, Gamble and Associates Consultants: Blum and Guerrero
Electrical Contractors: Fischbach and Moore; Superior Electric Co.

Engineered Electrical Systems for Commercial Buildings

GENERAL ELECTRIC

Executone gives you **4-way service** for sound and intercom systems!

We provide not only wiring plans, shop drawings, specifications and costs, but with our nation-wide organization of exclusive distributors we also give your clients on-premise maintenance of equipment and instruct their personnel in its proper use. If you have a job on your boards that should utilize intercom or sound, you should be familiar with these four important Executone services:

Not only this...

1 Consultation Service
Executone's Field Engineers will assist you in determining your clients' communication needs... recommend the system designed for the job... provide you with a professional consultation service.

2 Installation and Supervision
Each local Executone distributor is prepared to take full responsibility for the final and satisfactory operation of the system, whether installed by the contractor, or his own factory-trained crew.

But also this!

3 On-Premise Maintenance
Each local distributor is staffed with skilled, factory-trained technicians. They also have complete stocks of standard replacement parts. Continuous, uninterrupted performance of every Executone system is assured.

4 Personnel Instruction
Local Executone representatives instruct your clients' personnel in the proper use of Executone Systems. This planned program assures maximum benefits through proper operation and utilization of their systems.

Architects and engineers are invited to send for Executone's 325 page Reference Manual "B-6." No charge or obligation. Please use your letterhead.

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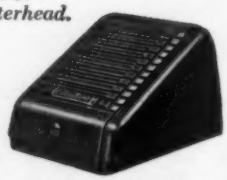


TECHNICAL ROUNDUP

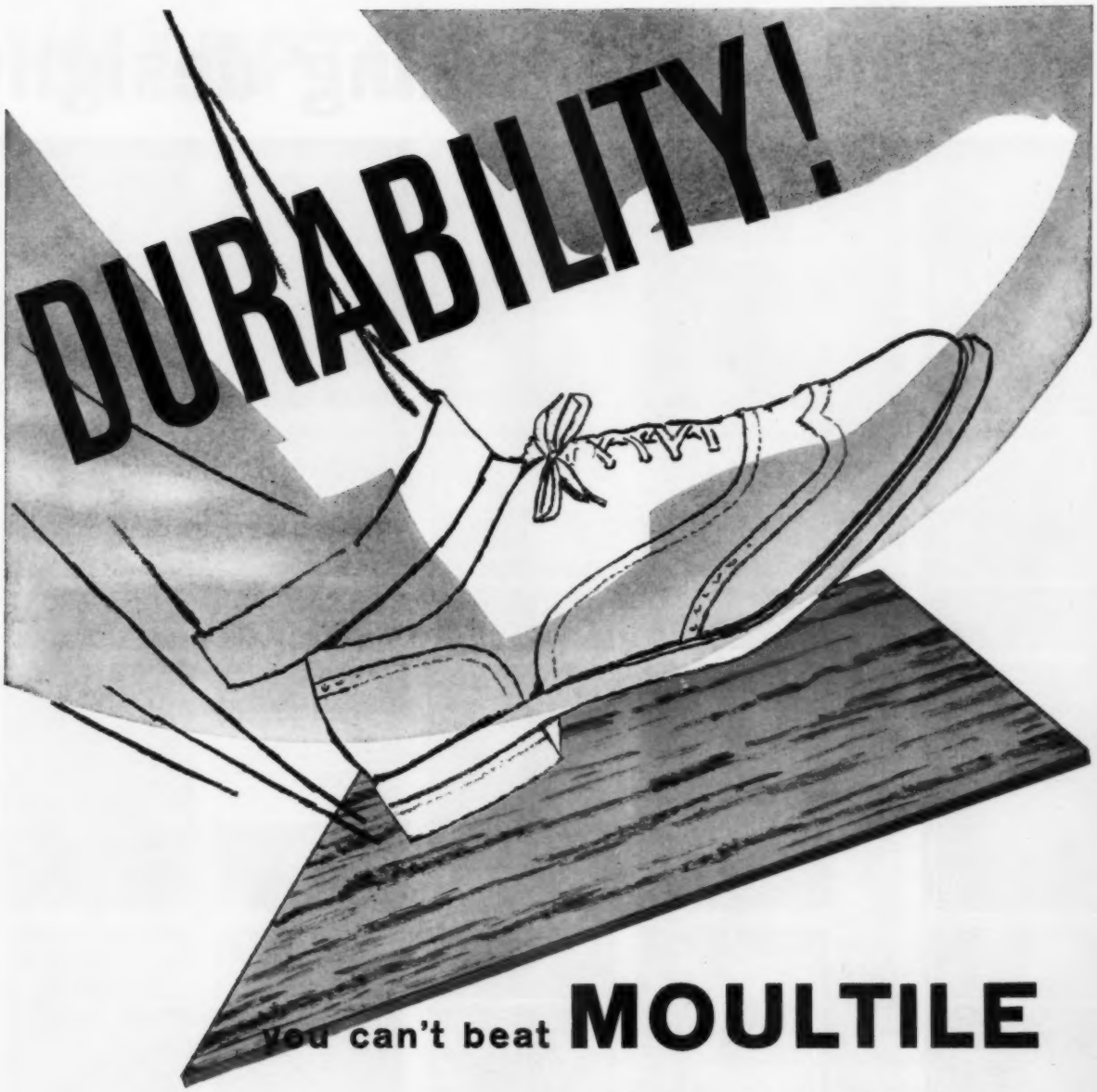
EXPOSED SEMI-ELLIPTICAL ARCHES FRAME ARIZONA GYM

Four semi-elliptical welded steel arch beams project above an integral roof-ceiling of prefabricated steel building panels to give a distinctive "inside-out" appearance to the main arena for a gymnasium in Willcox, Arizona.

Shop-fabricated in three sections and butt-welded together in the field, the arches are spaced on 22 ft centers, with masonry walls replacing the beams at the ends of the building. The arch webs taper gradually from the base to top center; the 10 in. wide lower flanges support the 6 in. thick building panels that are welded to them. Because the beams are designed so that compression stresses lie along the lower flanges, these light gage panels are used as lateral bracing, in addition to serving as both the structural roof and the finished ceiling. The corrugated paneling on the interior provides built-in acoustical treatment. On the exterior, the panels are faced with $^{25}/_{32}$ in. rigid insulation, over which is laid a terne sheet metal roof with raised seams paralleling the arches. Where the arches project through, a continuous metal flashing strip about 6 in. wide is wedged into place on both sides of the beam, and its upper edges capped by 2 in. wide steel reglets welded to the web beam.

Designed by Scholer, Sakellar & Fuller of Tucson, Arizona, the structure accommodates two basketball courts which extend across the width of its completely unobstructed interior. A 25 by 85 ft single story structure housing locker rooms and service facilities runs along one side of the main arena; in front is a small entrance building flanked by curving porticoes.

(More Roundup on page 266)



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Because floors take the bulk of wear and tear in *any* building, they've got to be rugged. With MOULTILE on the floor you're sure of long wear. MOULTILE is made from the very finest-quality materials money can buy... it's precision-cut to fit perfectly, lays flat without curling. And MOULTILE is tested, and re-tested to insure that each and every tile lives up to the highest standards. Specify durable, colorful, economical MOULTILE flooring for your next project.

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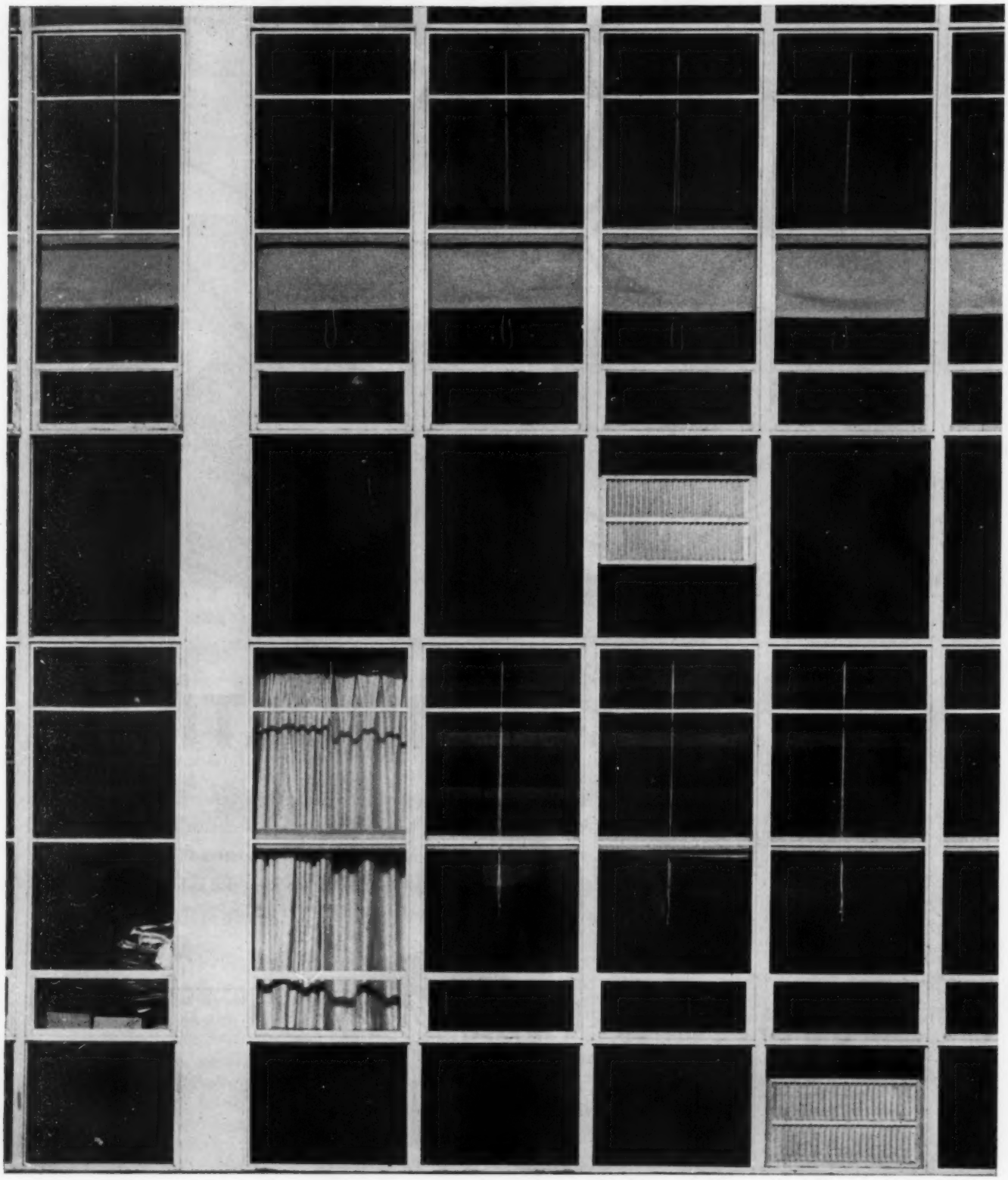
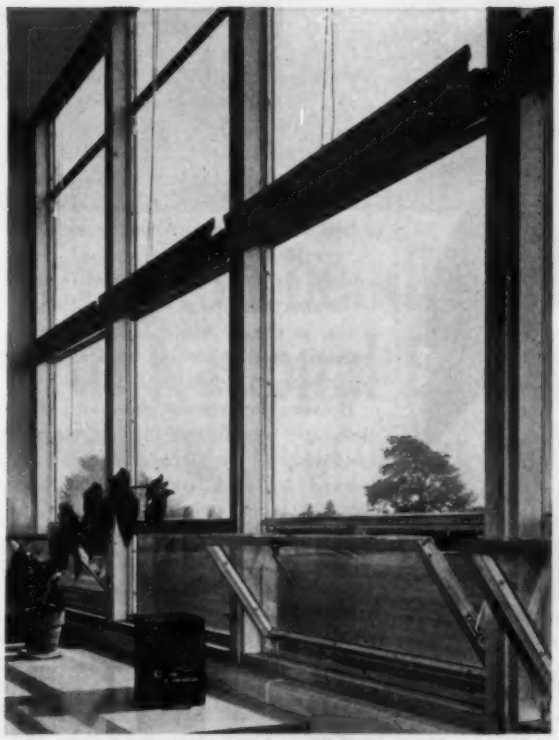
Striking design



with LUPTON metal windows

Penncrest Senior High School, Lima, Pa. Architects & Engineers: The Ballinger Co., Philadelphia, Pa.; General Contractors: Wallace Engineering & Construction Co., Bryn Mawr, Pa. All photographs by Cortlandt V. D. Hubbard.

New Penncrest Senior High School at Lima, Pennsylvania, matches bold design with maximum light and air



LUPTON Master Projected Aluminum Windows provide all-weather ventilation, deflect drafts, and provide various degrees of opening. Simplicity of hardware makes them easy to use, inexpensive to maintain.

A brilliant illustration of the harmony of fresh and forceful design with functional need is shown in the modern Penncrest Senior High School at Lima, Pennsylvania.

The use of LUPTON Master Projected Aluminum Windows helped make this "dream school" a practical reality. The strong horizontal lines and narrow mullions of these windows integrate exactly with the design intention. Their unobstructed areas, all-weather ventilation, lower initial cost, and lower maintenance costs make them a perfect choice for practical function.

For more than 75 years, LUPTON has been providing the finest metal windows to the country's leading architects for use in schools, hospitals, and other modern buildings. You'll find complete information in the Flynn catalogs in Sweet's *Architectural File*. To locate your nearest representative, look for the name LUPTON in the Yellow Pages under "Windows—Metal." Or write or wire.

LUPTON

METAL WINDOWS • CURTAIN WALLS

MICHAEL FLYNN MANUFACTURING COMPANY

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. . . AND 2-YEAR EXPOSURE TESTS PROVE IT!

STRUCTOGLAS "A" . . . molded from a new extra-hard resin* . . . is the first reinforced plastic panel to offer *proven resistance to weathering and discoloration.* As shown in the above photomicrographs, STRUCTOGLAS "A" was virtually unchanged in surface gloss or color after 2-year outdoor exposure. In the same tests, PANEL "X" (like other competitive panels made from good light-stabilized resins) lost all gloss and "alligatored" so badly the glass fibers were exposed, which greatly reduced its ability to transmit light.

These results prove only STRUCTOGLAS "A" assures prolonged weather resistance, lasting beauty and consistent light transmission . . . *at competitive prices!*

**GET THE FACTS ON STRUCTOGLAS "A"*

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COMPANY_____
STREET_____
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TECHNICAL ROUNDUP

CRYSTALLINE GLASS: A NEW ARCHITECTURAL MATERIAL

A new family of crystalline materials made from glass exhibit unique characteristics that point to their potentially wide application in the building field, and particularly in curtain wall construction. Developed under the direction of Dr. S. Donald Stookey, manager of Corning Glass Works' Fundamental Chemical Research Department, the tough heat-resistant substances can be made-to-order with a wide range of controlled properties — including types that are harder than steel, lighter than aluminum and nine times as strong as plate glass.

The material is made by adding special nucleating agents to glass, cooling it to solid form, and putting it through a heat-treating process during which it is transformed into a flint-hard, fine-grained crystalline substance more akin to ceramic than to glass. In final form, it can be chalky white, translucent, or transparent with a faint brownish cast reminiscent of tinted plate glass.

Because they remain glass until after they have been formed into objects and heat-treated, the *Pyroceram*s can be worked by such conventional glass-manufacturing processes as blowing, pressing, drawing or spinning. Some of them are fluid enough in the glassy state to lend themselves also to the centrifugal and investment casting techniques usually used in working metals.

Although the *Pyroceram*s are still a long way from the commercial market, Corning predicts that the material will cost only slightly more than glass, and far less than stainless steel.

(More Roundup on page 270)

Get good bending with National Electric Sherarduct

Sherardizing gives Conduit Steel added ductility

In the Sherardizing process of dry galvanizing, corrosion resistant zinc is actually alloyed with the steel wall of the conduit.

This principal of galvanizing assures a 100% uniform protective zinc coating from end to end of every length of conduit. The gradual heating and cooling of the Sherardizing process has an annealing-like action on the conduit itself. The result . . . Sherarduct rigid steel conduit possesses added ductility that pays off in terms of good uniform bends, more easily made.

Couplings go on faster because the high ductile steel permits sharp clean threading. Threads are cut before galvanizing, eliminating any chance of rust forming on the threads.

Insist on NE Sherarduct rigid steel conduit. It helps cut construction costs and safeguards electrical wiring against corrosion for all time.

Listed by Underwriters' Laboratories, Inc.

Sherardizing is Galvanizing at Its Best—Sherarduct is Galvanized Conduit at Its Best

National Electric Products

PITTSBURGH, PA.

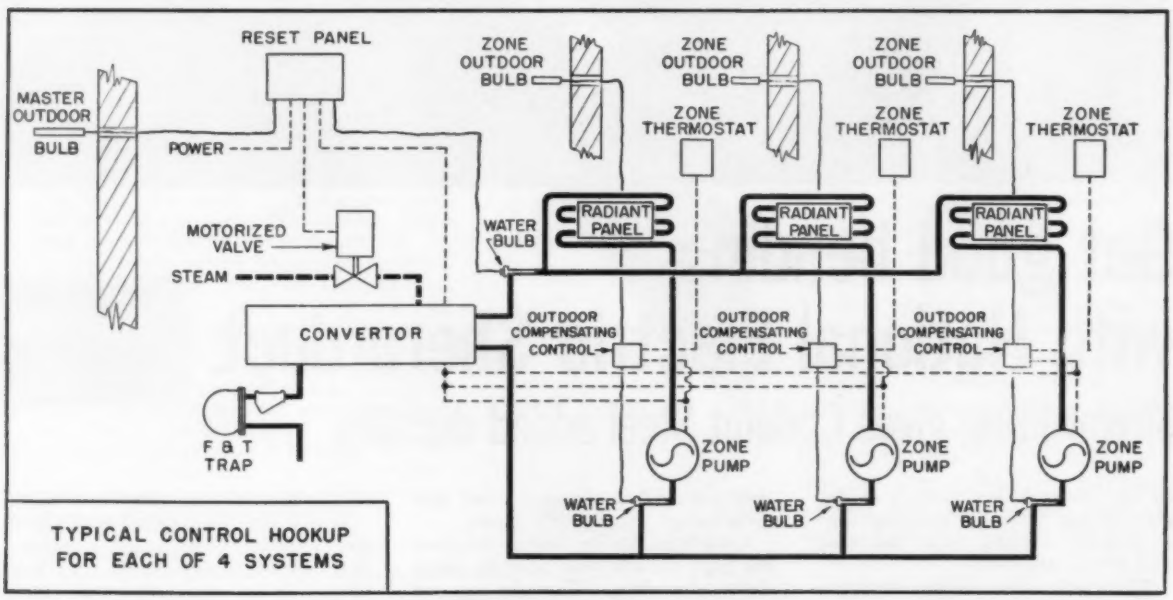
2 Plants • 12 Warehouses • 41 Sales Offices

Simple, economical solution of complex heating control problem

...FOR NEW 1000-BED HOSPITAL

Highlights of this SARCOTHERM CONTROL SYSTEM

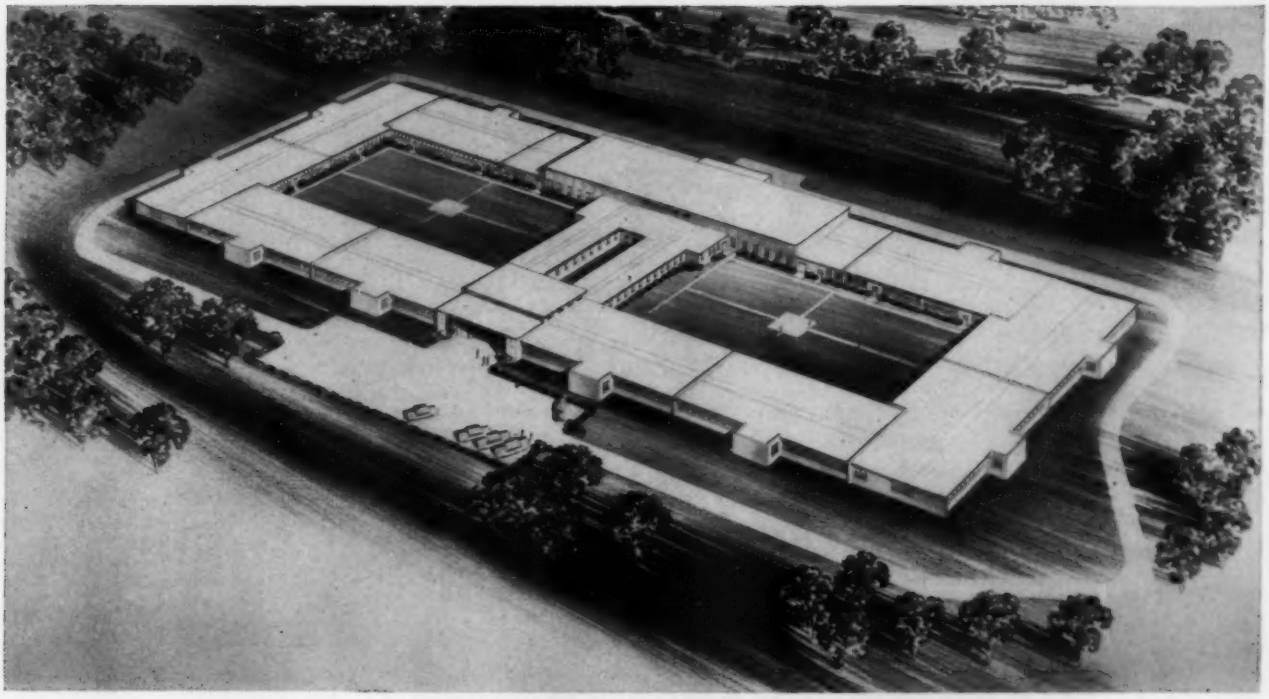
1. Provides *automatically controlled* heating comfort for 13 separate radiant heating zones.
2. Maintains uniform inside temperature in each zone by *automatically adjusting* flow of hot water through system to compensate for changes in outdoor temperature and room load demand.
3. *Automatically controls* flow of steam to each of 4 heat exchangers, varying temperature of hot water supplied to each radiant heating system in response to outdoor temperature changes.
4. *Combines simplicity* with accuracy and dependability . . . instruments are simple, rugged . . . easy to adjust and maintain.
5. *Insures low installed cost* . . . because of fewer controls, less wiring.



UNDIVIDED RESPONSIBILITY

Complete weather-compensated control system plus heating specialties from one dependable source. In addition to Sarcotherm control system components illustrated above, Sarcotherm and Sarco products installed include Sarcofin radiation, thermostats, balancing fittings with access boxes, radiator valves, thermostatic steam traps, Thermo-Dynamic steam traps and other accessories.

WEATHER-COMPENSATED CONTROL SYSTEMS FOR



Milledgeville State Hospital, Milledgeville, Georgia
1000-bed Psychiatric Building No. 2

Equipped with Sarcotherm Weather-Compensated Control System for radiant heating. **Architects** — Gregson & Associates, Atlanta, Ga. **Mechanical Engineers** — Ammons, McClure & Caldwell, Atlanta, Ga. **General Contractor** — Jordan Contracting Company, Columbus, Ga. **Mechanical Contractor** — Spivey Plumbing & Heating Co., Milledgeville, Ga.

OTHER ADVANTAGES OF SARCOTHERM SYSTEMS

Application engineering — Sarcotherm engineers, backed by years of experience in heating control systems, assist consulting engineers with individualized system diagrams.

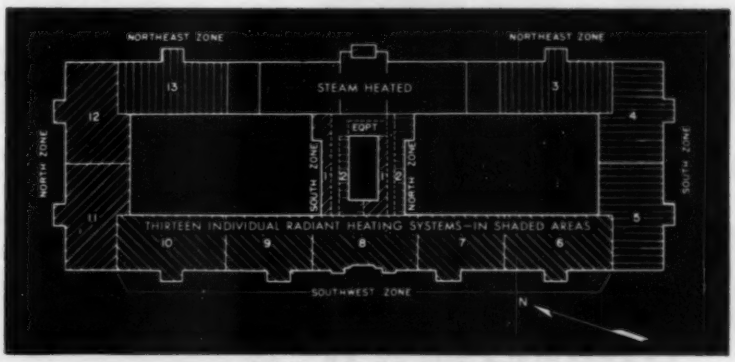
Easy to install — special installation drawings and diagrams of the complete system are furnished for each job.

Easy to maintain and adjust — by regular maintenance men, because of construction simplicity, fewer parts.

On-the-job assistance — to contractors from Sarcotherm's field engineers.

★ ★ ★

FOR COMPLETE CONTROL SYSTEM CATALOG, write . . . Sarcotherm Controls, Inc., Empire State Bldg., New York 1, N. Y.



Details of heating system

Building supplied with medium pressure steam from boiler house about 3000 feet away.

Steam supplies direct heat to unit heaters (black area) and indirect heat, through four heat exchangers, to 13 individual floor type radiant heating systems (shaded areas), each of which has its own pump.

Radiant heating systems consist of serpentine coils of ¾ inch wrought iron pipe imbedded in the concrete floor.

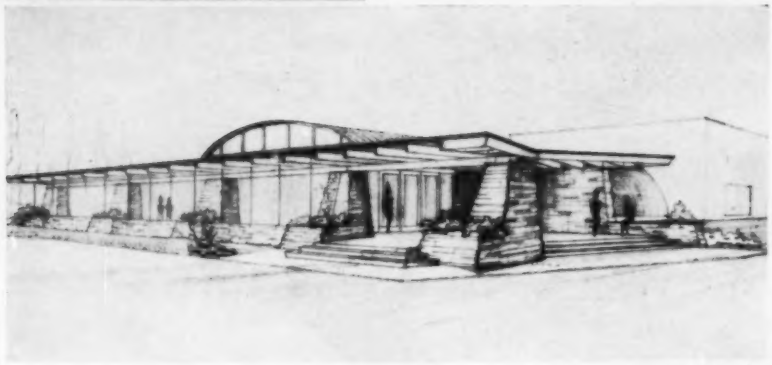
Sarcotherm

AN AFFILIATE OF SARCO CO., INC.

4011-B

STEAM, HOT WATER AND RADIANT HEATING

LOW COST PREFAB SHELL HOUSES COMMUNITY THEATER

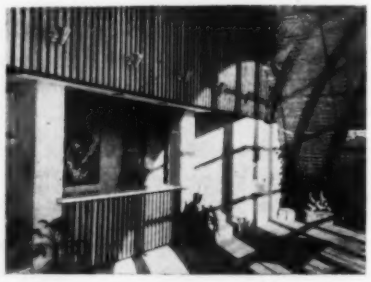


An auditorium constructed of a self-supporting steel shell is the first step in a three-stage building program which will provide attractive modern quarters for a small community theater group in Warren, Ohio. Architect Thomas A. Schroth, a member of the troupe, has planned for the shell to gradually become a secondary element in the overall scheme of the Trumbull Theater as other permanent units — scenery dock and dressing rooms, gallery area and lobby, and stage house — are added.

The auditorium, now completed, was constructed of 10 by 2 ft *Lok-Rib* steel

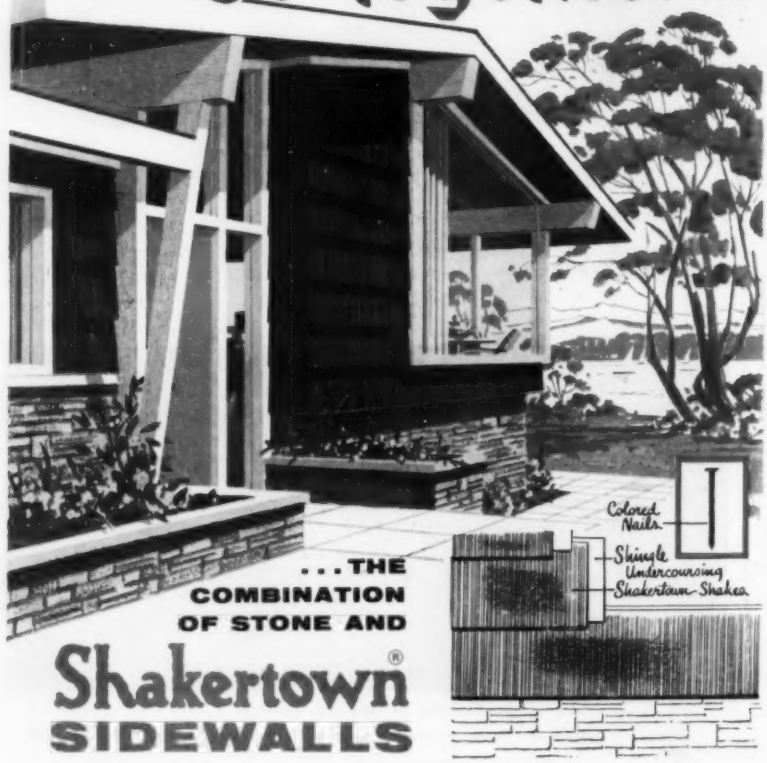
panels made with seven inch ribs and cap sections which, when assembled, formed strong box girder arches at 2 ft intervals along the shell. The simplicity of this shell construction resulted in substantial savings, both in time and costs, allowing apron stage, seating area, rest rooms, projection booth and ticket office to be housed in a structure costing only $25,000. Present seating capacity is 168.

A partition of cement block and vertical slatting divides the lobby from the auditorium. Interior ceiling arches on both sides of the partition are covered with exposed aluminum foil insulation, held in place by an overlaid network of black enameled steel mesh.



Stage lighting is controlled from a bridge at the rear of the auditorium, while the seating area is illuminated by six aluminum-cone downlights, with conduit concealed in the ribs of the metal arches. The auditorium is heated by a perimeter heating system which supplies warm air through tile ducts beneath the flooring, and ventilated by a 24 in. ventilating fan.

THEY Go Together...



...THE COMBINATION OF STONE AND

Shakertown®
SIDEWALLS

One complements and enriches the other. The accent colors of the shakes combine beautifully with the rugged texture of stone. The effect is rustic . . . alive . . . appealing. Now there are *twelve* rich Shakertown "pre-stained" colors—including four new, exciting shades for 1957.

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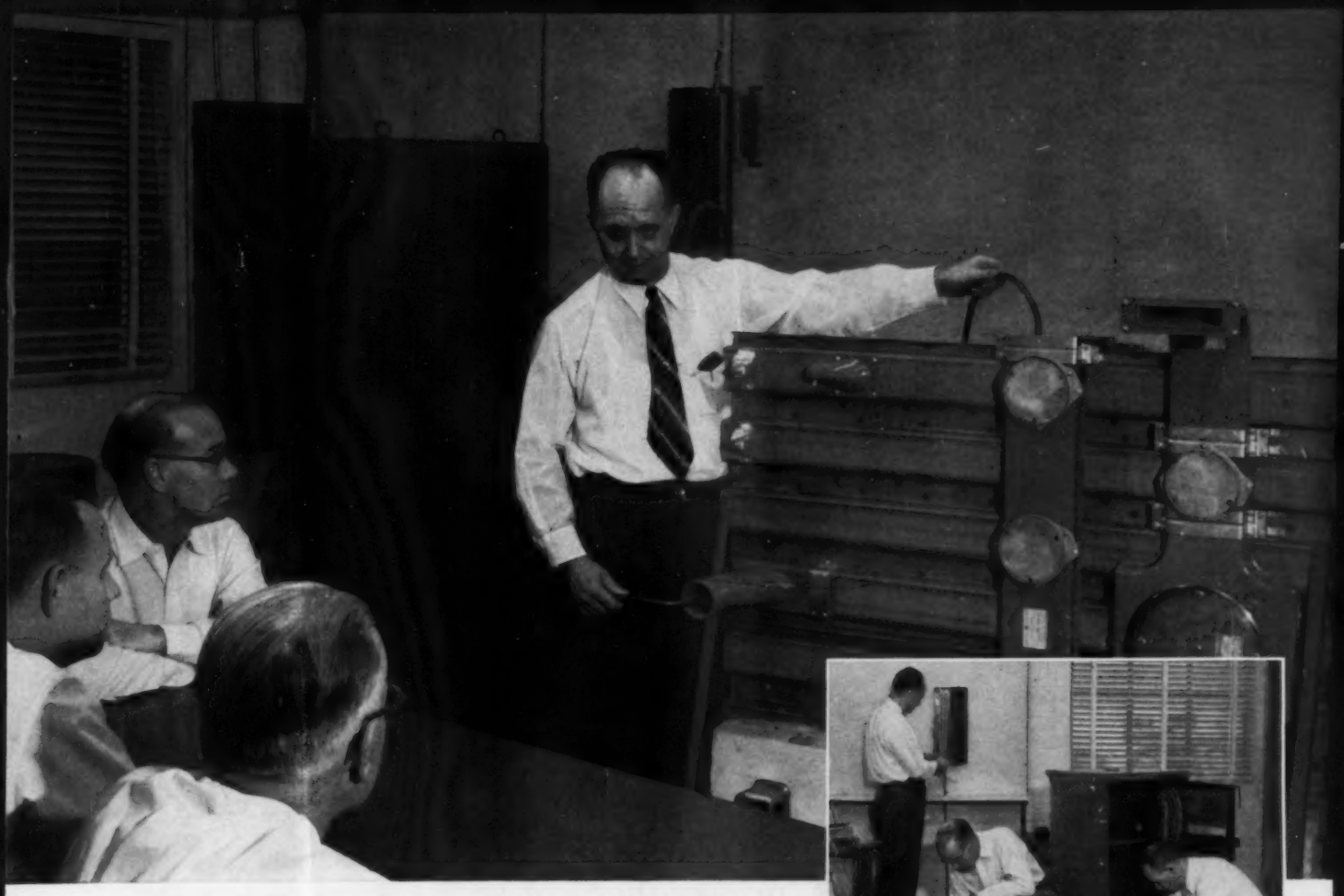

(Above) Demonstrating with a large sample section, Pennsylvania Bell Telephone Company School instructor explains to technician-students the basic principles of Q-Floor wiring. (Right) Members of the Q-Floor class become familiar with the product's advantages by wiring an actual installation in the classroom.

Q-Floor . . .
a Required Subject at this School

Every year, an estimated 1,600 Bell Telephone Company of Pennsylvania technicians attend a special school near Harrisburg, Pa. to learn the latest practice in line and equipment installation. Bell feels that cellular steel subflooring is so important that an entire classroom is devoted to the subject of Q-Floor wiring. Here the students learn by working with an actual Q-Floor installation that wires can be pulled and telephone or electrical outlets established often in a matter of minutes, and that every six-inch area of the entire floor is available for outlet use. This flexibility, so graphically pointed out to Bell students, plus substantial savings in construction time and money has influenced owners and architects all over America to provide for the future by building with Q-Floor today. Use the coupon to write for literature.

With Q-Floor performing its dual function of a structural subfloor and as a close-module underfloor wiring distribution system, building owners, designers and contractors benefit from construction speed, convenience and complete wiring flexibility.

Today's finest buildings are built with **Robertson**

Q-Floor

The STANDARD sub-floor construction for modern buildings

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one of a series

Satinwood, background for elegance...a spirited graciousness

■ Ralph Cowan, whose name is known nationwide as a synonym for bold imagination and deft artistry in photography, draws out the delicately etched figuring and the molten sheen of Satinwood veneer by Stem in this self-portrait. "Rare wood paneling has a way of being always the same and always different, as your eye unveils the almost iridescent ripples of light below the surface the way it does in this Satinwood panel. It has no equal for providing the perfect background for elegance." As it does for the photographer, Satinwood provides the architect a three-dimensional quality that, together with its ageless patina of molten gold, delights the eye and the spirit of everyone who sees it, for a moment or over many, many years. Through the catalytic artistry of the architect, rare wood paneling and graceful living strike up a happy match. Wherever a background of fine wood is used, its noble presence is felt by all, welding substance and spirit into exciting unity. When rare woods from the forests of the world are used, there is a spirited graciousness – beautiful wood is the essence of peace; it brings serenity to a room in a way that is all its own. Now, Stem brings you, through the magic of modern factory methods, all the nobility, splendor and lifetime permanence of the finest veneer that tradition knows. And you can afford to be generous with this wood, for the cost is low.

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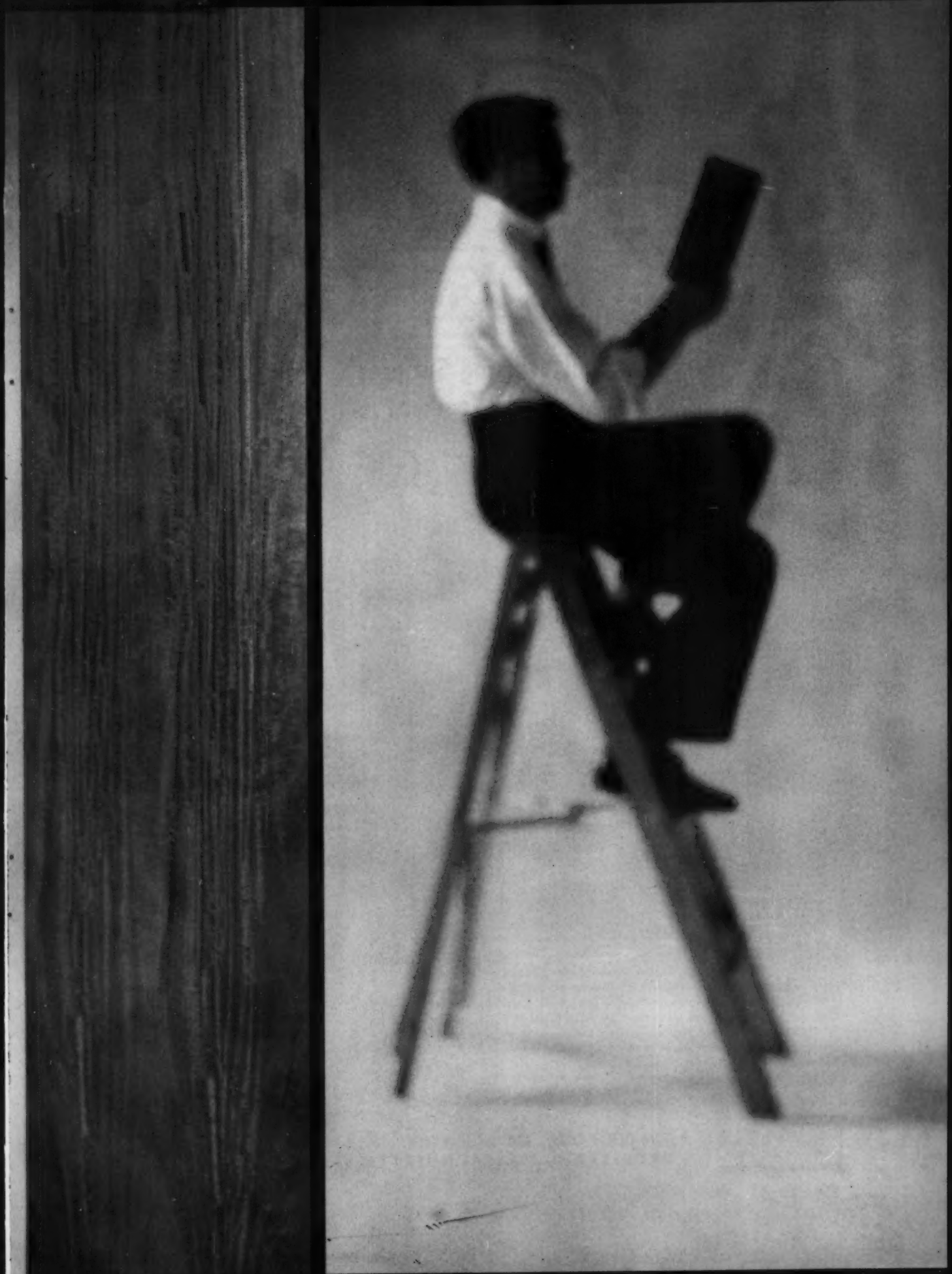
RARE WOODS FROM STEM



PRODUCT REPORTS

(Continued from page 244)

Motel Communications System

A "custom engineered" sound system designed especially for motel and hotel use includes such features and services as high fidelity radio or recorded music in every room, an emergency alarm system which sounds in every room, two-way communication in drive-in registration areas, and a maid-locating service. Nerve center of the system is Stromberg-Carlson's *SS-800* Communication System, which contains the sound amplifier, AM-FM high fidelity radios, automatic record changer, and appropriate channel switches. Paging, announcements, radio or recorded music can be transmitted to any or all of the room or areas served by individual speakers. The sound systems are available on a lease plan from *Stromberg-Carlson, Rochester 3, N. Y.*

Phase Voltage Converter

Weighing only 39 pounds, the new *Kato* voltage converter changes single phase, 115 volt, 60 cycle AC to three phase, 230 volt, 60 cycle current. Frequency is held constant within a fraction of a cycle. The aluminum alloy frame houses a capacitor starter as well as both input and output receptacles, and is about 10 inches high. Intake and exhaust air vents are located in lower halves of end-bells, making the converter drip proof. Equipped with vibration dampeners, the machine can be used to change phase and voltage for sound track equipment if placed a few feet away from recording equipment. The new phase converters are available in five sizes ranging from 500 to 2500 watts. *Kato Engineering Company, Mankato, Minn.*

Whitehall Ferry Terminal Walking Surfaces Are *Safe* in All Kinds of Weather . . .

Staten Island Ferry passengers are safe from slipping hazards because of Norton ALUNDUM Aggregate. Outside ramps and platforms have been made permanently non-slip, wet or dry, and wear-resistant by ALUNDUM (C.F.) Aggregate incorporated in cement. Inside surfaces, too, have no slipping hazard because the terrazzo floor areas and stairs contain ALUNDUM Terrazzo Aggregate.

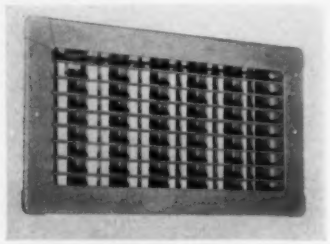
Architect — Roberts & Schaefer Co.
General contractor — Frank E. Freeman, Inc.
Terrazzo contractor — Ross Tile & Terrazzo Co.

See our catalog in Sweets or write for a copy of No. 1935R

★ NORTON COMPANY ★
WORCESTER 6, MASSACHUSETTS

Video Monitors

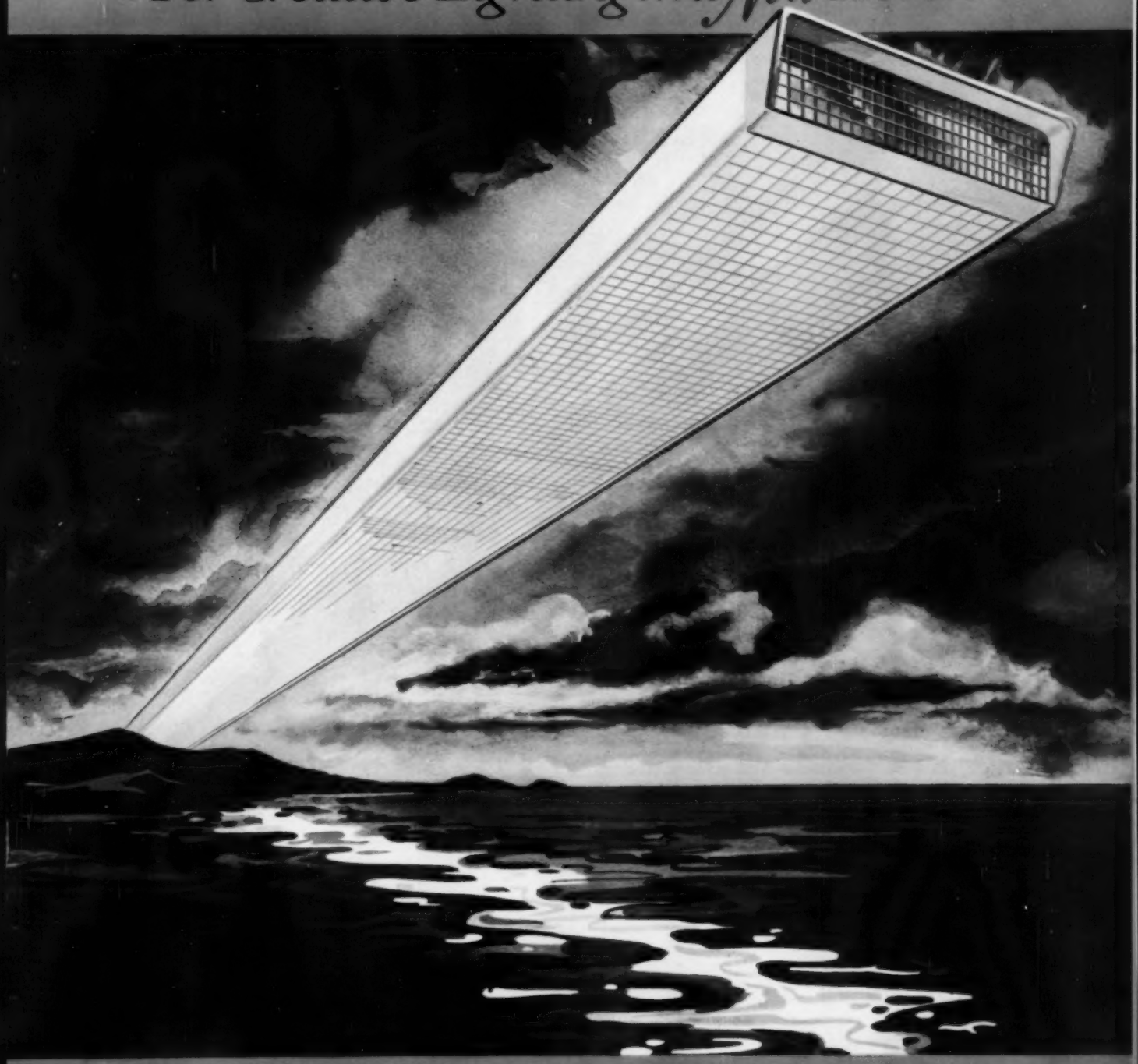
A new line of TV monitors is said to provide bright, clear, high definition pictures for broadcast station or industrial and institutional television picture presentation with closed-circuit systems. Horizontal resolution of all models is in excess of 600 lines; the aluminized kinescope tubes in the 14, 17 and 21 inch units have 70 degree deflection systems, and the 24 and 27 inch units have 90 degree systems. The monitors are available in both cabinet and rack mounted versions with covers or front panels removable for easy cleaning and servicing. *General Precision Laboratory Inc., Pleasantville, N. Y.*



Air Conditioning Grilles

Flexi-Trol, a new line of air conditioning grilles and registers, consists of four different styles of grilles: single deflection grilles with vertical or horizontal bars, and double deflection grilles with either vertical or horizontal bars in front. Bars are adjustable for complete selection of air diffusion patterns. Available in all standard and many non-standard sizes, the grilles feature one-piece welded construction and a durable baked-on finish. *Lima Register Co., Lima, Ohio.* *(More Products on page 278)*

For Creative Lighting... a New Horizon!



A new concept in uninterrupted flowing lines of light
for Stores—Offices—and other Commercial areas

the Dynamic-Exciting

CATALINA

by BENJAMIN

Dynamic-Exciting

CATALINA

Widens the Creative Horizons of those who Design with Light!

...a new High in

Dynamic, uninterrupted light
the flowing lines of light are unbroken by metal strips, supports or braces. Reinforcing rods are on inside, out of view.

Harmonizing, shallow design
just 3½" from top to bottom avoids that "bulky look." Slim, trim silhouette harmonizes with any interior.

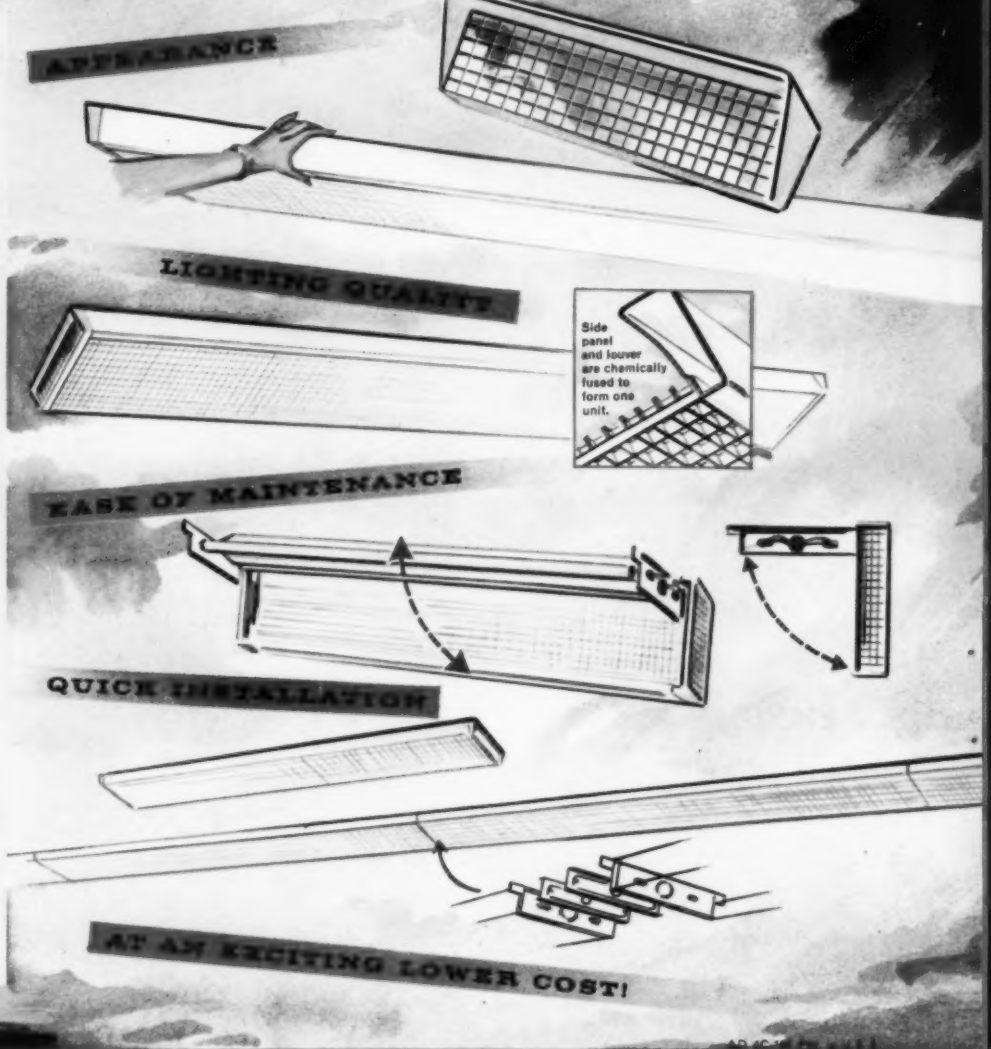
Functional beauty
decorative end caps are of injection-molded plastic with a glistening metallic face.

Exciting lighting quality
with 45° shielding and diffusing side panels plus 55% upward light* for greater seeing comfort. Double-wall side panels effectively control brightness and add strength.

Exceptional ease of maintenance
entire louver and side-panel assembly swings down from either side. Unique thumb-pressure tabs require no tools. Control equipment easily accessible from below by merely removing 2 screws.

Time-conserving installation
simple spacer couplers between fixtures on continuous lines assure positive alignment. Available in 2 and 4 lamp 96" Slimline, 2 and 4 lamp 40-W Rapid Start and 2 and 4 lamp 40-W Rapid Start in an 8' tandem unit.

**When ceiling mounted, a top reflector is provided.*


APPEARANCE
LIGHTING QUALITY
Side panel and louver are chemically fused to form one unit.
EASE OF MAINTENANCE
QUICK INSTALLATION
AT AN EXCITING LOWER COST!

for Catalina data sheets, write
BENJAMIN ELECTRIC MFG. CO.
DES PLAINES, ILLINOIS

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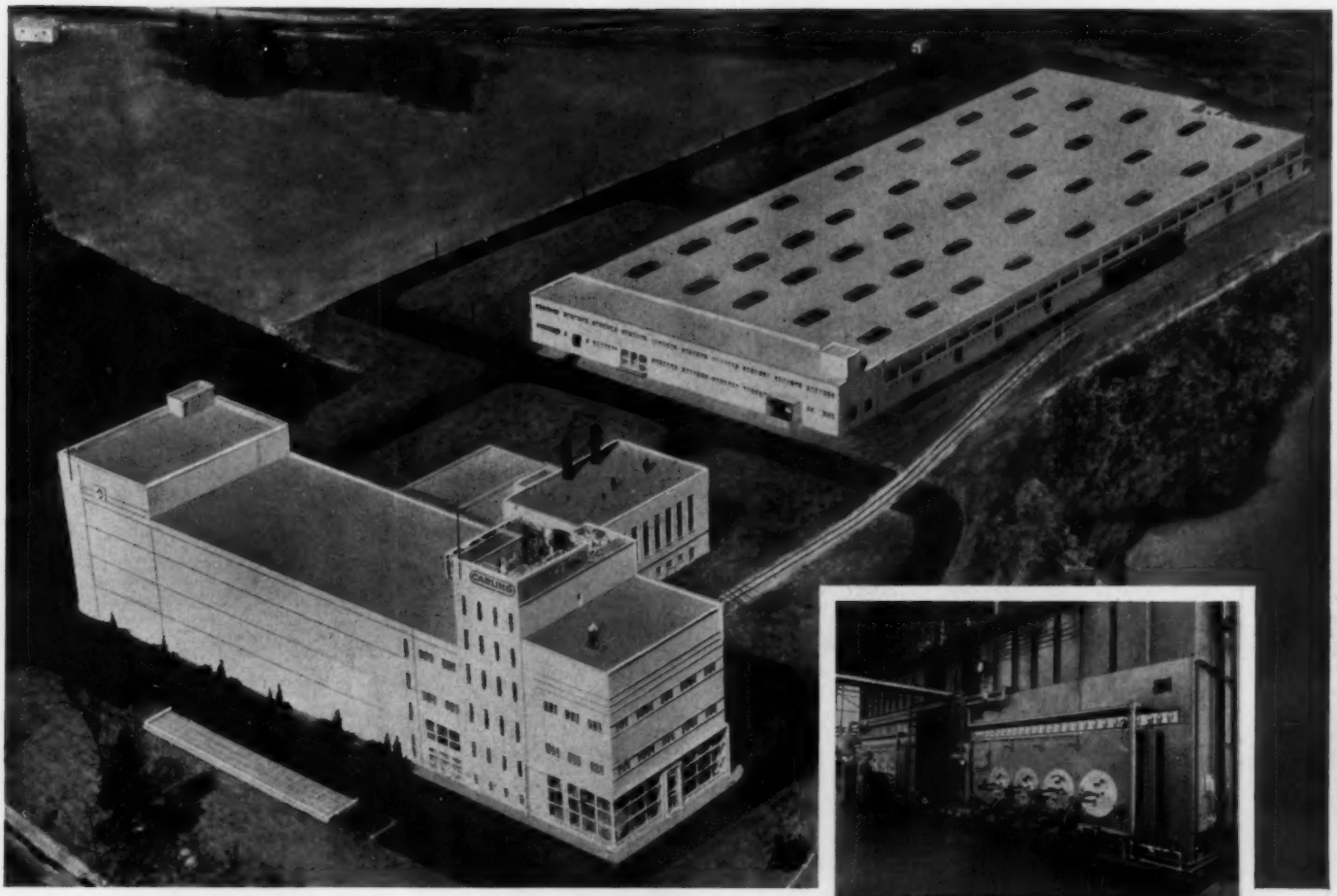
always the source of good lighting

Now Setting the Pace in COMMERCIAL LIGHTING



Each B&W Integral-Furnace Boiler at Carling's Natick plant has a capacity of 58,000 lb of steam per hr at operating pressure of 150 psi and 200 psi design pressure. Plant designed by: Carling Brewing Company, Engineering Department, Cleveland. Architect: John Marshall, Canadian Breweries, Ltd., Toronto. General Contractor: Gilbane Building Co., Providence, R. I.

B&W Integral-Furnace Boilers Prove Reliability at Carling's

TWO UNITS ASSURE CRITICAL TIME CYCLING IN BREWING PROCESS

Carling Brewing Company's Natick, Mass., plant, the first new brewery in New England in more than 40 years, produces 600,000 barrels of Red Cap Ale and Black Label Beer a year. Steam for the brewing process, pasteurizing, sterilizing, and heating the plant is supplied by two B&W Integral-Furnace Boilers.

One Unit Alone is meeting the plant's maximum load of 35,000 lb of steam per hr, with the second on a stand-by basis. This boiler-room schedule is part of the plant's overall design, which will permit adding another 600,000 barrels of capacity when required.

After a Year of Operation, Lewis R. Grant, Chief Engineer, reports that the oil-fired boilers have given instantaneous response to load changes and are operating at high efficiency. There has been no maintenance necessary since the boilers went on the line.

Reliability Is Important at the Natick plant because of the exacting time cycling of the brewing process. The B&W units have easily met this test. The steam delivered has been clean and dry, with no indication of solids carry-over.

B&W Integral-Furnace Boilers, for any steam requirements up to 350,000 lb per hr and for all fuel conditions, incorporate installation, operating, and maintenance features that give greater boiler efficiency, availability, continuity of service, and overall economy. They provide maximum capacity in small space, high fuel economy, smokeless combustion, and economical, fast steaming. Completely integrated units, they are backed by the undivided responsibility of a single manufacturer, with nearly a century of steam generating experience. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N. Y.

G-839-B

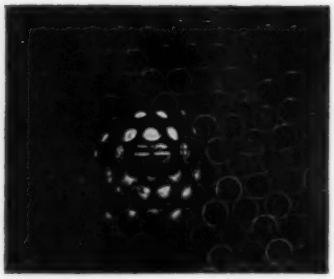
BABCOCK & WILCOX

BOILER DIVISION

PRODUCT REPORTS

Stainless Steel Submersible Pump

This new, completely submersible stainless steel pump has an automatic, completely enclosed switch which turns on when water reaches any predetermined depth and turns off when water is completely pumped from sump. It is 12 inches high, 6½ inches in diameter, and has a ⅓ hp, 120 volt Westinghouse motor with an 8 foot U.L. approved cord. Capacity is 50 gallons per minute at 6 foot lift. *R. S. Corcoran Co., P. O. Box 1404, Joliet, Ill.*



Rigid Plastic Pipe

Made of high-impact *Styrene* base material, *C/D* rigid plastic pipe stands stacking and pressure without deforming or chipping. Because fittings are solvent-welded to the pipe, only three simple tools — saw, paint brush and cement — are required for installation. Recommended uses include sewer connections, septic tanks, disposal beds, footings, storm and road bed drains, conduit and industrial down spouts. Available in 10 and 20 ft sections, the new *C/D* pipe comes in sizes from ½ to 4 inches for conduit uses, and from ½ to 6 inches for drains. *Yardley Plastics Co., 142–44 Parsons Ave., Columbus 15, Ohio.*

Roosevelt Field Shopping Center
A Webb & Knapp project
Architects: I. M. Pei & Associates
General Contractor:
George A. Fuller Co.

Seals weather out—air conditioning in

The outstanding qualities of DEL Synthetic Rubber Compound made it the natural choice for sealing the window wall construction, ornamental pools and masonry joints in the Roosevelt Field Shopping Center. DEL compound provides a permanent weather-tight seal – adheres securely to a wide range of materials including glass, metal and masonry. It is easily applied in paste form and it sets **without shrinkage** to a resilient rubber. This seal provides tenacious adhesion under the most rigorous conditions such as extreme expansion and contraction, vibration, and wide temperature changes.

DEL Synthetic Rubber Compound is remarkably easy to use. A caulking gun, trowel or knife is all that is needed.

Specify and use DEL for all your sealing problems to assure permanent weather-tight installation and protection against deterioration with age.

DAVID E. LONG CORP.
220 East 42nd Street New York 17

DEL PROTECTIVE COATINGS

Check these advantages of DEL Synthetic Rubber Compound

- Waterproof and non-shrinking
- Resilience over a wide temperature range (plus 250°F to minus 100°F)
- Adhesion to most materials
- Stretch and recovery with joint movement
- Inertness to weathering and corrosive atmospheres

Informative Literature on DEL Synthetic Rubber Compounds, DELseal Tapes and compounds, and DEL Protective Coatings . . . describes in detail how DEL products help solve building sealing and protective coating problems. Send the coupon today!

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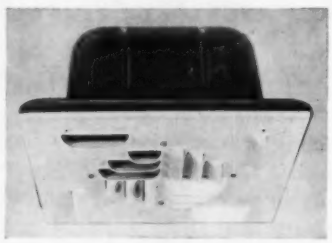
Gentlemen: Please send me free literature on your DEL Synthetic Rubber Compound, DELseal tapes, and DEL Protective Coatings.

Name ..... Title .....
Company .....
Address .....
City ..... Zone..... State .....

Compact Water Chiller

Although smaller than the average-size automatic washer, the Acme *Flow-Pac* water chiller for home air conditioning is said to handle cooling requirements for most homes. Its 18 by 24 inch cabinet can easily be located in many areas of the home, and its nonferrous water circuit, complete hermetic refrigeration system is said to provide efficient, economical operation. Capacities range from 1¾ through 5 hp. *Acme Industries, Inc., Jackson, Mich.*

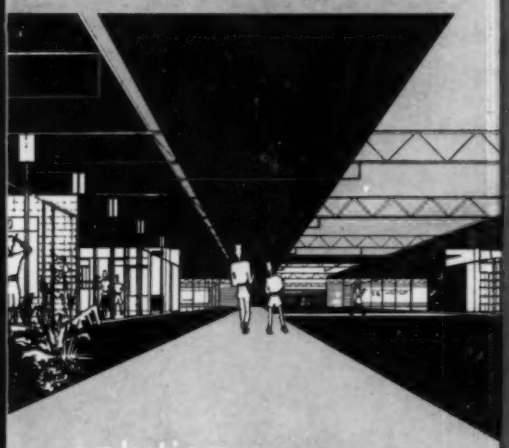


Plastic Loudspeaker Baffles

A new line of low level sound baffles features a bass reflex enclosure sized to replace one standard acoustical tile when used in ceiling installations. Constructed of high impact plastic, the unit consists of a plaster ring, bass reflex enclosure, and a faceplate which incorporates directional ports to provide a smooth 360 degree dispersion pattern. According to the manufacturer, Model SBR 8 DS can be easily installed and will accommodate any eight inch speaker. Faceplate is finished in Desert Sand. *Fourjay Industries, 2360 W. Dorothy Lane, Dayton 9, Ohio.*

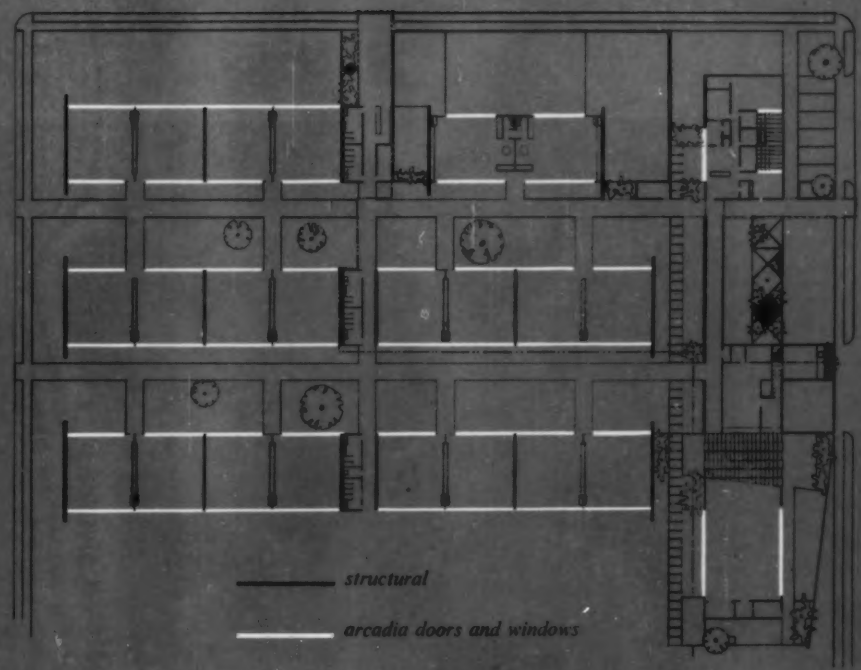
(More Products on page 282)

problem: To provide maximum accessibility from indoor classrooms to outdoor classrooms and play areas; from cafeteria to playground. To provide for the maximum in natural light and ventilation, and to create light weight non-load bearing walls.



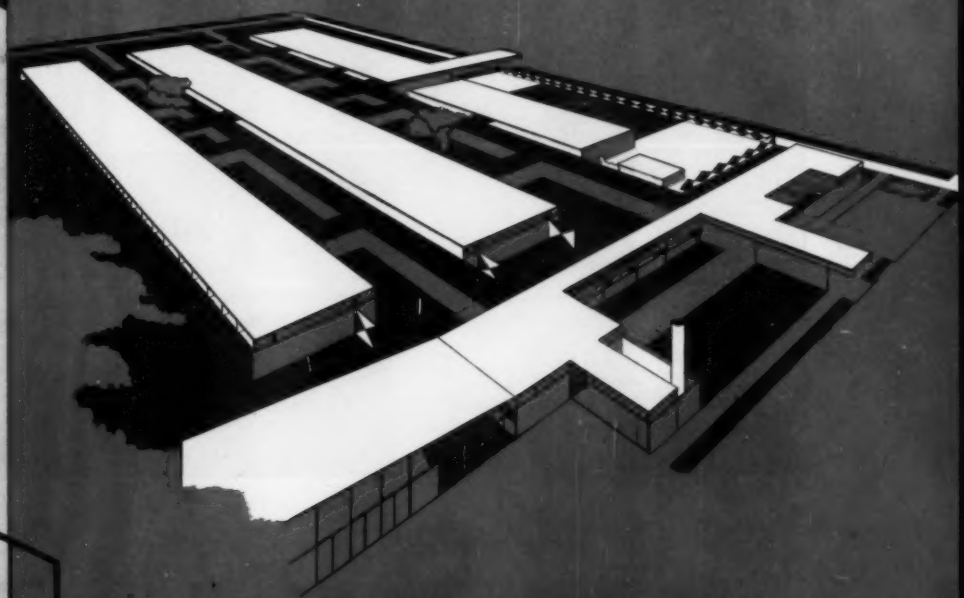
solution: Every facet of this complex problem was solved by creating window walls of sliding glass. Sliding Glass Doors by Arcadia Metal Products not only satisfied every requirement but also proved to be the most economical solution.

the name for the finest in windows and doors of sliding glass...



PROPOSED McDONOGH NO. 40
ELEMENTARY SCHOOL ADDITION *New Orleans, La.*

Architects: Stoffle & Finger



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Electrical Contractor: Ling Electric, Inc.

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The Best Costs LESS INSTALLED

"Give me a building today designed to meet tomorrow's demands." This common request is the reason why more and more architects, designers, and electrical engineers specify Electrical Metallic Tubing (E.M.T.) for America's foremost commercial, institutional, public, and industrial buildings.

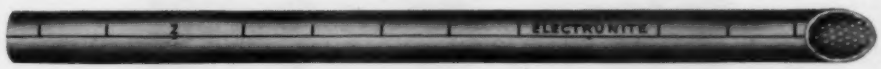
And in over-all Electrical Metallic Tubing (E.M.T.) economies, *the best costs less* installed! When using E.M.T., every coupling is a union . . . the galvanized finish is not cut away as in a threading operation. Republic E.M.T. may be bent with ease and the galvanized coating will not chip or flake.

Republic ELECTRUNITE E.M.T. offers pull-in, pull-out wiring-system flexibility. It is designed to provide adequate raceway wiring today . . . with built-in future capacity, for adequate wiring facilities tomorrow. It is further proof that with Republic ELECTRUNITE E.M.T. *the best costs less installed!*

This functional advantage—plus installation features—is why Republic ELECTRUNITE E.M.T. is used throughout the construction of four major commercial buildings in the Dallas area. Republic ELECTRUNITE E.M.T. is "INCH-MARKED"® . . . easy to measure—"GUIDE-LINED" . . . easy to bend —"INSIDE-KNURLED" for easy wire-pulling.

With Republic ELECTRUNITE E.M.T. quality, you can give your clients true wiring-system economy, reduce over-all construction costs, and get the job done on schedule. Be sure to specify Republic ELECTRUNITE E.M.T. with your next new building recommendations. Only genuine Republic E.M.T. is "INCH-MARKED" and "GUIDE-LINED".

Write today for handy reference booklet giving complete facts.



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Truscon "O-T"® Steel Joists for floor and roof supports are light, strong, and fire-resistant. A product of Republic's Truscon® Division, they're easy to handle, lessen the time and labor required for erection, save material in supporting frame-work and foundations. Send for illustrated booklet with complete information and facts.

Truscon Vision-Vent® Window Walls make any building bright, light, and weathertight. Truscon also offers window types and sizes for every type of construction. All are engineered to the application. All enjoy Republic's reputation of quality. Send for illustrated catalog with complete facts—or contact your nearest Truscon representative.

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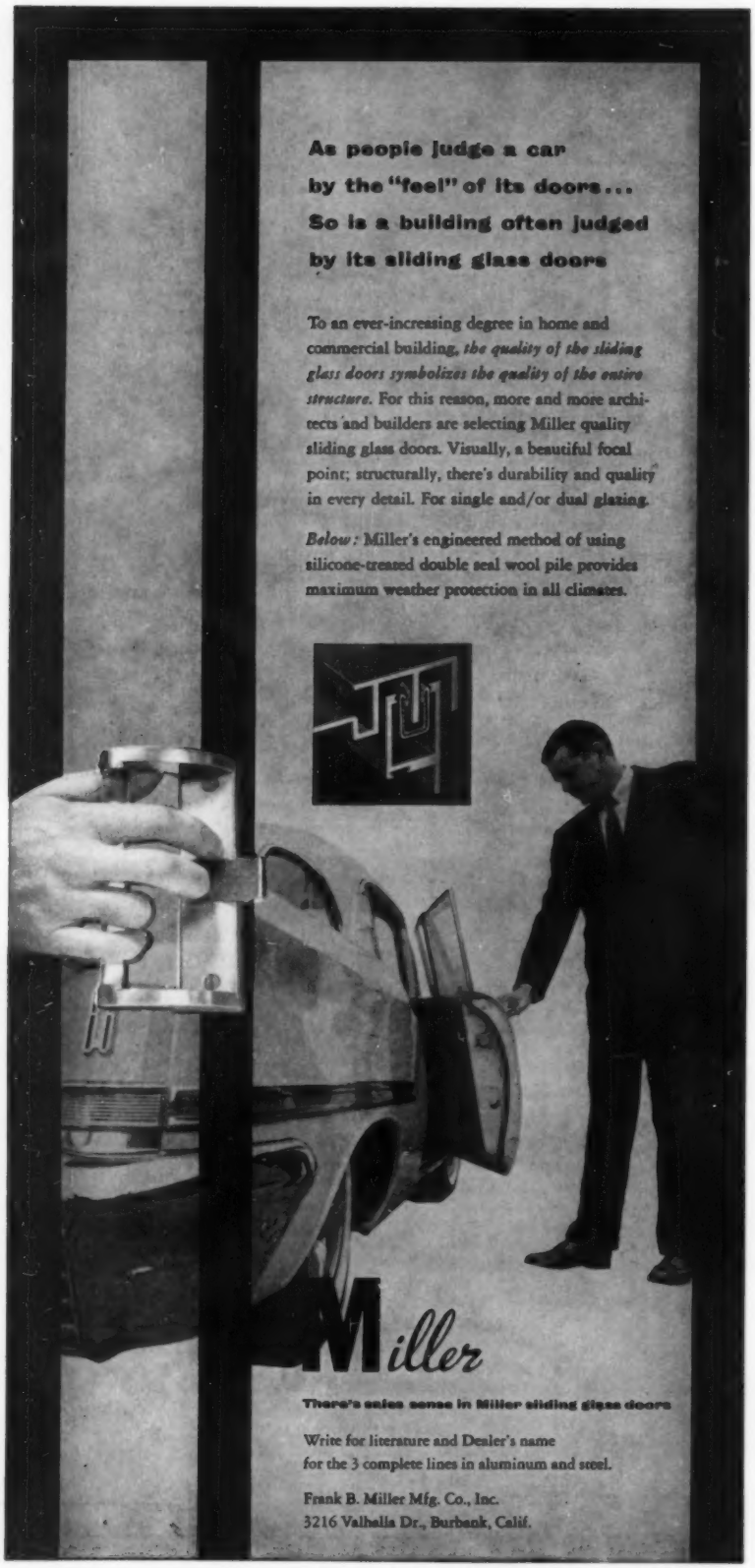
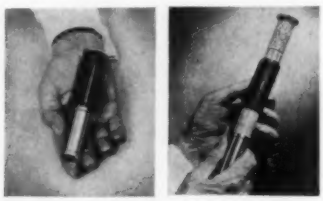

As people judge a car
by the "feel" of its doors...
So is a building often judged
by its sliding glass doors
To an ever-increasing degree in home and commercial building, the quality of the sliding glass doors symbolizes the quality of the entire structure. For this reason, more and more architects and builders are selecting Miller quality sliding glass doors. Visually, a beautiful focal point; structurally, there's durability and quality in every detail. For single and/or dual glazing.
Below: Miller's engineered method of using silicone-treated double seal wool pile provides maximum weather protection in all climates.
Miller
There's sales sense in Miller sliding glass doors
Write for literature and Dealer's name
for the 3 complete lines in aluminum and steel.
Frank B. Miller Mfg. Co., Inc.
3216 Valhalla Dr., Burbank, Calif.
Member of Sliding Glass Door & Window Institute

PRODUCT REPORTS

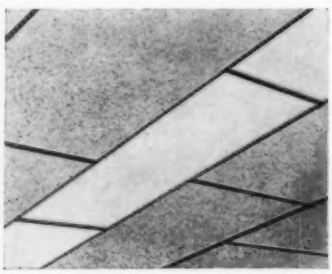
Glare-Reducing Luminaires

Niletone Louvre-Lite fluorescent tubes emit a soft pastel green light which is said to greatly increase the eye's ability to distinguish fine detail, while sharply reducing glare. They are recommended for use in drawing rooms, drafting departments, general business offices, machine shops, and for quality control,inspection and similar precision work. *Nu-Lite Corp., 41 S. 6th St., Newark, N. J.*



Cylindrical Slide Rule

According to the manufacturer, this new cylindrical calculator, by spiraling the scales around a tube instead of in a straight line, achieves graduations equal to those of a 66-inch slide rule. Capable of solving all problems involving multiplication, division, proportion, percentages, logarithms, roots, and powers, the instrument is made of metal throughout. Though the instrument can be opened to 10¼ in. by 1¼ in., its size when closed is only 6 in. by 1¼ in. *Arthur F. Smith Co., 311 Alexander Street, Rochester, N. Y.*



Lay-In Troffer For Inverted Tees

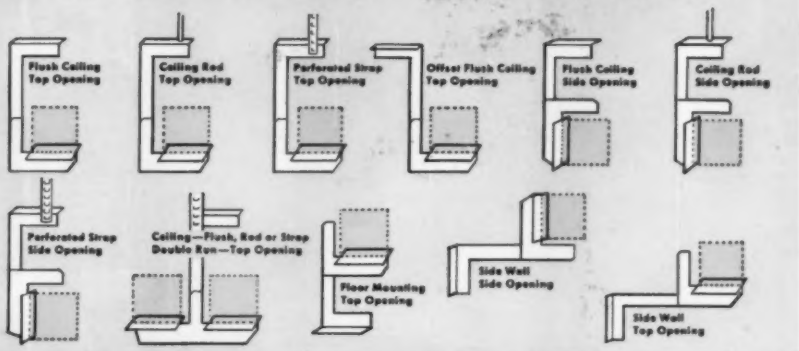
The *Gridex* lay-in troffer is a versatile one-foot wide fluorescent unit designed to provide flexible recessed lighting for one-foot "T"-grid suspended ceilings with interlocking inverted tees. It is available with hinged steel louvers for a shielding of 40 degrees by 40 degrees, or with all types of glass and plastic shielding in a hinged door frame. Easily installed individually or in continuous rows, the *Gridex* troffer comes in 4 ft lengths to accommodate two or three rapid-start lamps. *Smithcraft Lighting, Chelsea 50, Mass.*

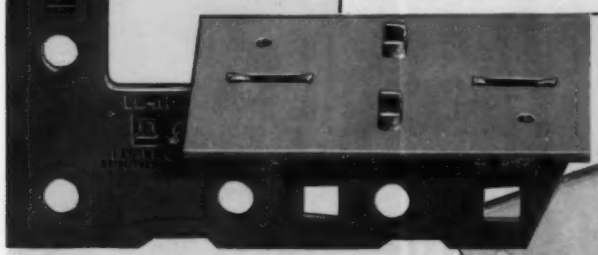
(More Products on page 286)

SQUARE D's NEW HANGER

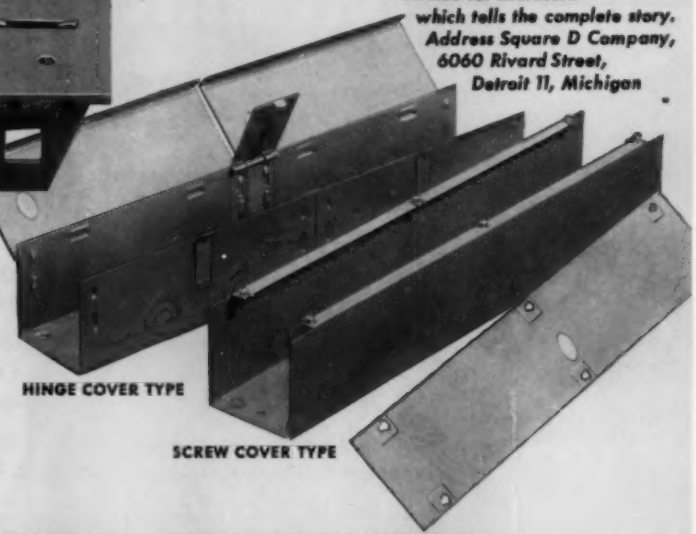
MAKES THIS LAY-IN DUCT STRONGEST— FASTEST AND EASIEST TO INSTALL!

HERE ARE 11 OF THE MORE THAN 20 WAYS YOU CAN HANG SQUARE D WIREWAYS!..


Flush Ceiling Top Opening
Ceiling Rod Top Opening
Perforated Strap Top Opening
Offset Flush Ceiling Top Opening
Flush Ceiling Side Opening
Ceiling Rod Side Opening
Perforated Strap Side Opening
Ceiling—Flush, Rod or Strap Double Run—Top Opening
Floor Mounting Top Opening
Side Wall Side Opening
Side Wall Top Opening



Write for literature which tells the complete story. Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan



Square D Lay-In Duct Gives You—

—lay-in accessibility. No wire pulling, anywhere.

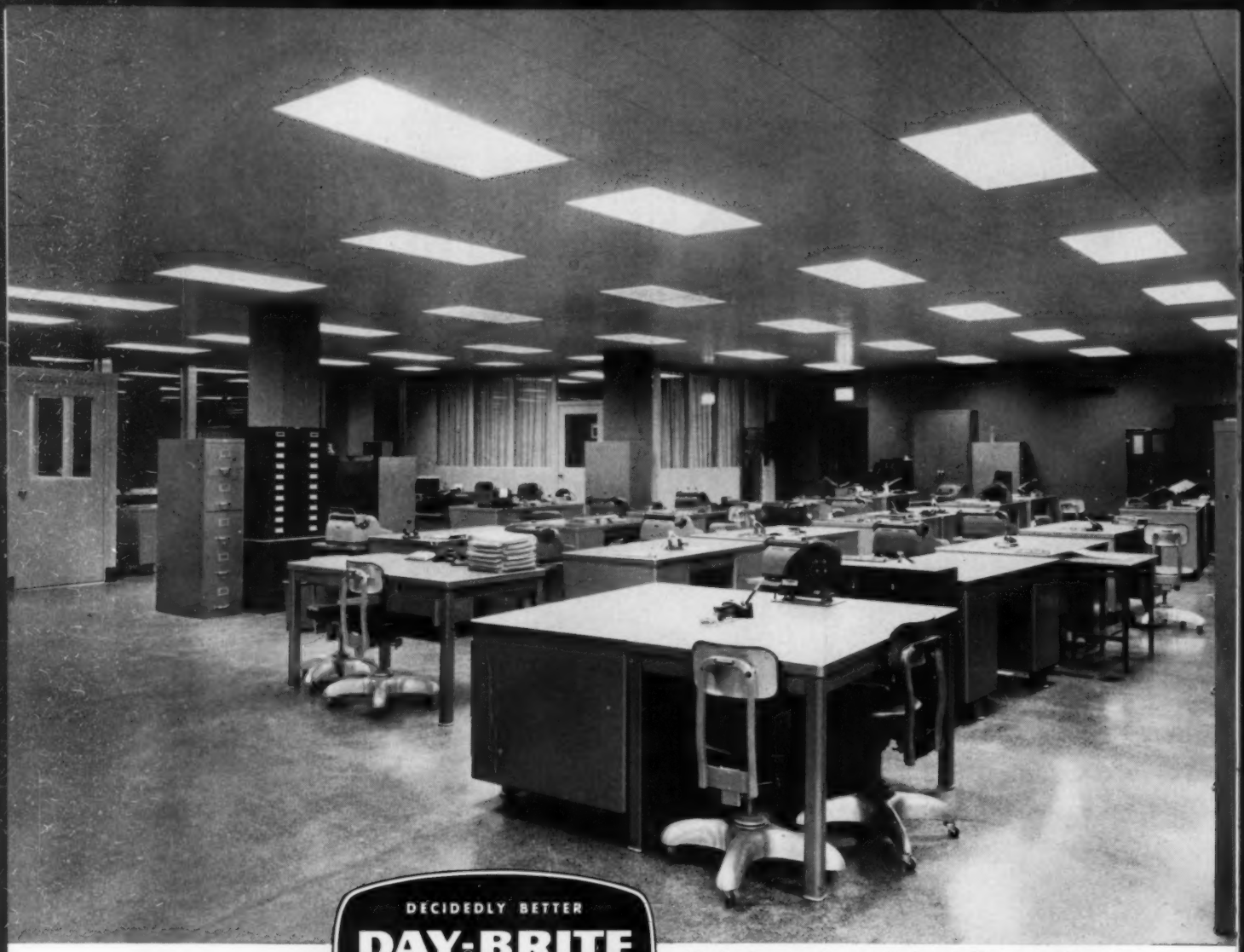
—both hinge cover and screw cover type lay-in duct use same fittings.

—a *complete* line of fittings, *all* Underwriters' Laboratories approved—lengths, connectors, T's, L's, junctions, telescopes, pull boxes.

—more rigidity. New joint design actually *triples* duct strength.

NOW...EC&M PRODUCTS ARE A PART OF THE SQUARE D LINE

SQUARE D COMPANY



DECIDEDLY BETTER
DAY-BRITE
Lighting Fixtures

No shadows or glare in this large office area. Fixtures are Day-Brite Mobilex.®

No "OR EQUAL" can match it!

Comfortable . . . compatible . . . Day-Brite lighting. Specify it. Stick with it. You'll *never* be sorry. For, in quality of lighting and construction, no other fixture on the market can match Day-Brite. There are no "or equal's."

Strong words . . . and we can back them up. Ask your Day-Brite representative to arrange a demonstration. He's listed in the Yellow Pages. See, compare Day-Brite fixtures—side by side—with any other fixtures *at any price.*

Inspect. Handle. Ask questions. Look at the line. Compare the lighting. Compare fixture design. Be a tough critic. Choose slowly . . . carefully . . . wisely.

Isn't that the best way to select lighting . . . to satisfy clients . . . to uphold your own reputation? It's the best way to *see* Day-Brite superiority for yourself!

FOR FURTHER INFORMATION
SEE OUR CATALOG IN SWEET'S
OR WRITE FOR COPY

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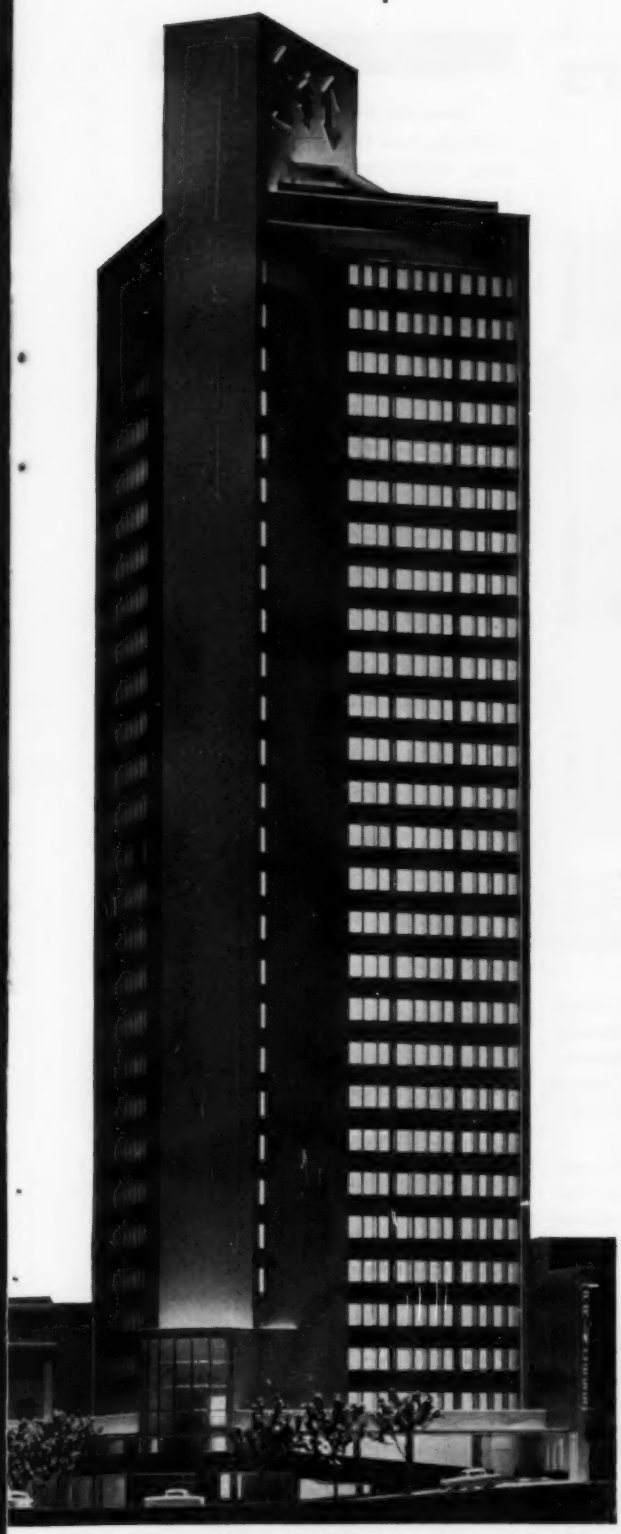
5465 Bulwer Ave., St. Louis 7, Mo.
Day-Brite Lighting, Inc., of California,
530 Martin Ave., Santa Clara, Calif.
71162

NATION'S LARGEST MANUFACTURER OF COMMERCIAL AND INDUSTRIAL LIGHTING EQUIPMENT



Slim and stately, Nashville's new Life & Casualty Tower is the Southeast's tallest commercial structure. Offices are lighted with Day-Brite fixtures.

EDWIN A. KEEBLE ASSOCIATES, Architects

BURNS & THORPE, Associated Mechanical Engineers

J. A. Jones Construction Company, General Contractors

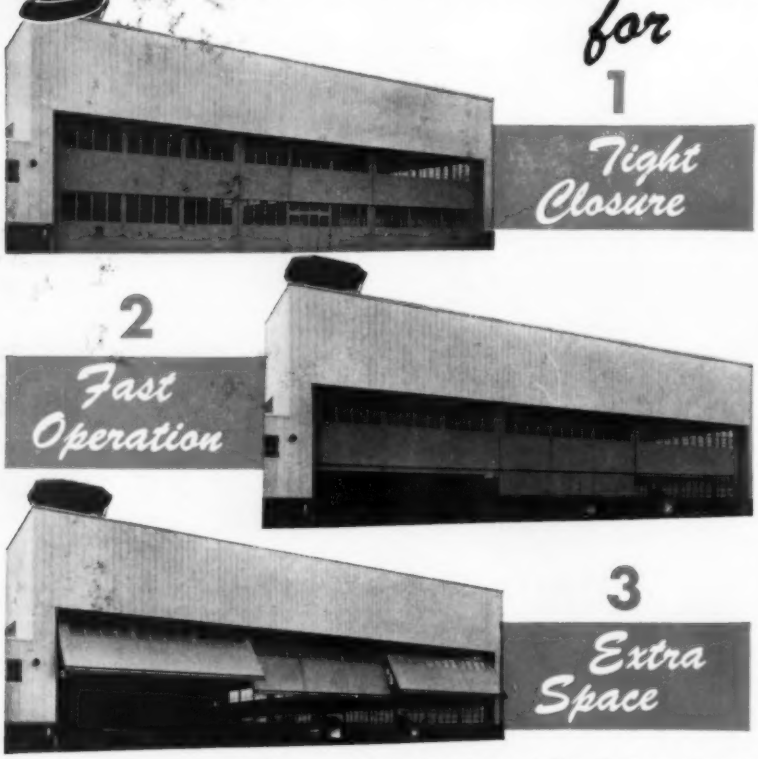
Sadler Electric Company, Electrical Contractor

Others—General Elec. Supply Co., Distributor

Think of Day-Brite lighting fixtures as a hard-working production tool. Here they make seeing easier, increase worker efficiency, reduce turnover and absences, encourage cleanliness and order.

Day-Brite lighted executive office looks modern, reflects prestige, welcomes visitors and customers.

Specify BYRNE doors for



Architect — Albert Kahn Assoc. Archts. & Engrs., Detroit
Contractor — E. & F. Construction Co., Bridgeport, Conn.

Sikorsky Aircraft enjoys all of these benefits and more with this installation of Byrne Vertical Lift Canopy Doors at Stratford, Connecticut.

In addition to being weather-tight, with initial savings in heating plant investment and subsequent fuel savings, Byrne Doors are structurally sound. They offer complete safety through multi-cable, balanced suspension and rigid construction that withstands hurricane wind velocities. Automatic, self-locking operator mechanisms and overload relays protect personnel, valuable equipment, and the doors themselves.

Swift operation uses minimum operating power, while maintenance costs have run less than ¼ of 1 per cent a year on similar installations. The space-saving design of Byrne Doors permits full use of the enclosed working area and forms a canopy which actually adds to the effective working space during most weather.

This installation consists of three Byrne Vertical Lift Canopy Doors, each 57'4" x 36'. They are made in sections, and can be operated individually or simultaneously. Byrne's more than 25 years' experience in door design, construction and erection is at your service.

Free Catalog

Complete line of industrial and hangar doors for every need . . . for openings up to 55' high by 150' wide. Write for your copy now!

BYRNE doors, inc.

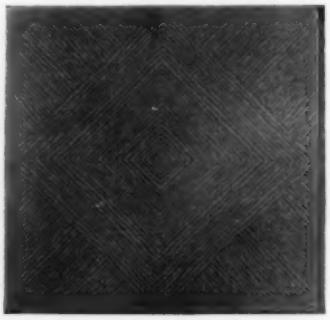
1603 E. 9 Mile Road, Ferndale, Detroit 20, Mich.

101 Park Ave., New York 17, N. Y.
Cafritz Bldg., Washington 6, D. C.
Dept. r-23 Byrne Doors, Ltd., 381 College St., Toronto 2B, Ont.

PRODUCT REPORTS

Compact Building Insulation

Fiberglas New Process Building Insulation, manufactured without breather paper, includes only one layer of paper, the vapor barrier. Produced by a new glass forming process, its light weight is expected to result in significant savings through more rapid application, reduction of space needed to store the product, and less cost for transportation. *Owens-Corning Fiberglas Corp., Toledo 1, Ohio.*



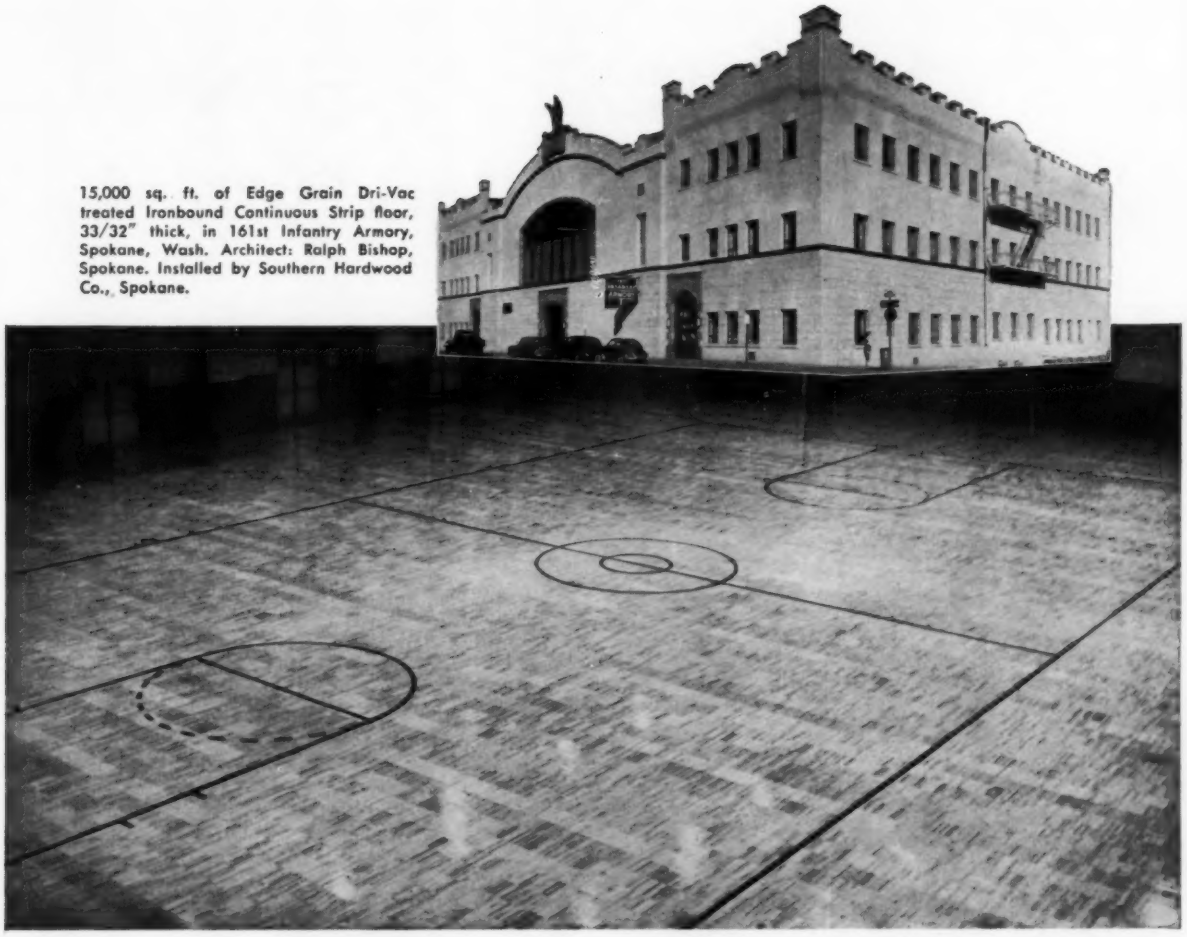
Pre-Decorated Ceiling Tiles

Temlok Tile is now available in two new patterns, one featuring a diamond arrangement of concentric squares as shown, and the other a random scattering of stars and "moons" over the face of the tile. Both come in the 12 by 12 inch size, ½ in. thick, with tongue and groove joints that permit the tiles to be blind-nailed or stapled to furring strips, or cemented to an existing ceiling. *Armstrong Cork Co., Lancaster, Pa.*

Ceiling Air Diffuser

Series MO-MJ (multi-orifice, multi-jet) ceiling air diffusers for installation with all types of modular ceilings are designed to introduce conditioned air through openings that blend into the architectural treatment of the ceiling in which they are installed. Required air volumes at engineered air velocities may be delivered through square or rectangular outlets sized to match standard ceiling tile construction or span any "T" bar suspended system. One, two, three and four way balanced distribution systems are available, and the air flow discharge angle may be adjusted after installation. *Air-Factors, Inc., Monrovia, Calif.*

(More Products on page 290)



15,000 sq. ft. of Edge Grain Dri-Vac treated Ironbound Continuous Strip floor, 33/32" thick, in 161st Infantry Armory, Spokane, Wash. Architect: Ralph Bishop, Spokane. Installed by Southern Hardwood Co., Spokane.

FALL IN...

. . . shouts the sergeant and a host of heavy combat boots tramps across the Ironbound drill floor in the 161st Infantry Armory. Forward march . . . left flank . . . double to the rear to the right – the men respond with mechanical precision, the boots beat out a rhythmic cadence–and the floor, too, performs.

It does its job exceptionally well, in fact – refuses to let beating boots or bounding basketball players mar its beauty – and retains its unmatched uniform resiliency and dimensional control for generations. Reason: It's an Ironbound* Continuous Strip* Hard Maple Floor.

There are reasons, too, why only Ironbound meets the rigid requirements of the 161st. The flooring is selected edge grain strips of finest Northern maple, 33/32" thick to assure long service. Strips are laid over mastic and cork and bound by a sawtooth steel spline. This floor and all Ironbound floors are installed by expert flooring contractors. And every Ironbound installation is guaranteed.

Next time you're planning a floor that must be able to take a beating and remain smoothly beautiful, stable and resilient, be sure to consider Ironbound. For name of your nearest authorized installer, write Robbins Flooring Company, Reed City, Michigan, Attn: Dept. AR-957.

Available vacuum-treated by the Dri-Vac process.

MILLIONS WALK DAILY ON IRONBOUND FLOORS

*T.M. Reg. U.S. Pat. Off., Canadian Pat. Off.

ROBBINS FLOORING COMPANY

World's Largest Maple Flooring Manufacturer — Reed City and Ishpeming, Michigan

NOT A SINGLE

...on Fenestra's new

SEAM IN SIGHT

1⅜" Hollow Metal Door!

Fenestra® keeps the seams invisible on this new 1⅜" hollow metal door. No joints to mar the smooth flush beauty, either open or closed. No joints to loosen after daily use begins.

With no surface lines, cleaning is as quick as wiping a blackboard. Flush top and bottom keep dust from gathering. The edges are safely smooth.

Four other important extras enhance the door:

1. You get added strength and rigidity through Fenestra's exclusive multi-rib reinforcement.

2. You buy a complete package: door, frame, hardware. All fitted at the factory.

3. Frames are Fenestra's famous Lock Miter joint frames. Easy to put together and install.

4. You buy these custom-quality doors at stock prices. Fast delivery when you need it is standard.

Add up the points on this new door and you'll see that a lot of time, money and old-fashioned common sense went into its development. Why not take ten minutes to get more information today. Call your local Fenestra representative or mail the coupon, below.

Fenestra INCORPORATED

HOLLOW METAL DOOR-FRAME-HARDWARE UNITS

YOUR SINGLE SOURCE OF SUPPLY FOR DOORS · WINDOWS · BUILDING PANELS

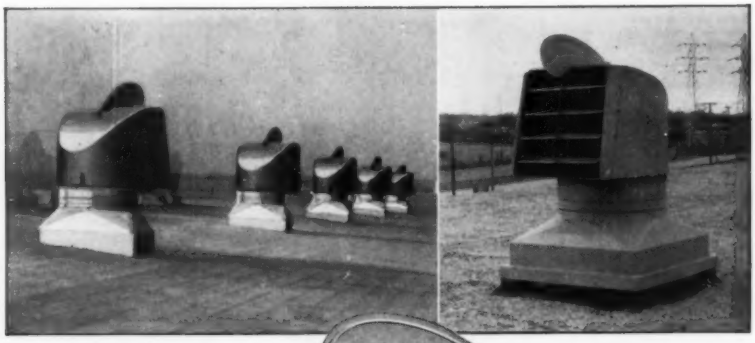
Fenestra Incorporated
Dept. AR-9, 2252 East Grand Boulevard,
Detroit 11, Michigan
Please send me complete information on New Fenestra 1⅜" Hollow Metal Door-Frame-Hardware Units.

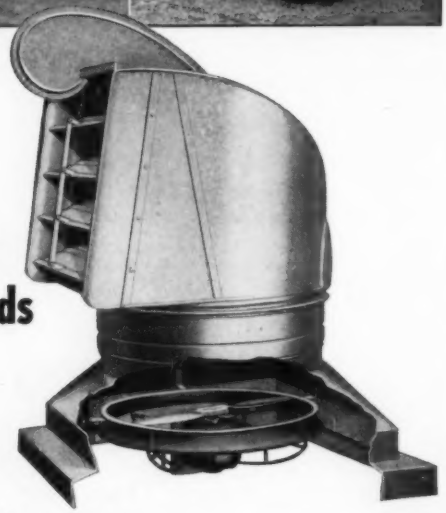
NAME_____

FIRM_____

ADDRESS_____

CITY_____ STATE_____





Certified Ratings

AMA

How to handle ventilation needs that *vary;* use the *double duty*

Swartwout *Airjector* Roof Ventilator

Here's the *adaptability* you've wanted in ventilating buildings where you have extra floods of heat or fumes at certain periods. Airjector gives you large capacity *power* expulsion when you need it, but saves power when the capacity requirement is less by acting as a *gravity* type ventilator. Its ball bearing *rotary mounting* increases efficiency at all times by keeping the discharge opening always downwind.

Airjector moves a large volume of air at low cost — combines economy and efficiency with pleasing appearance. Oversize outlet and curved head cut static resistance to a minimum. And any appreciable outside air currents passing around the head provide extra suction effect on the outlet area. Capacities for the 13 sizes, and many capacity variations, carry Certified Ratings under the standard test codes.

For peak loads — or for ordinary gravity ventilation — you pay only for what you need with this *double duty* method available in the Airjector. It's the answer for ventilation problems in many situations, such as welding shops, spray booths, heat treating rooms, forge shops, over pickling tanks, galvanizing and plating rooms, etc. Write for complete catalog data, Bulletin AJ-G.

THE SWARTWOUT COMPANY

18511 Euclid Avenue **Cleveland 12, Ohio**

Representatives in all Principal Cities

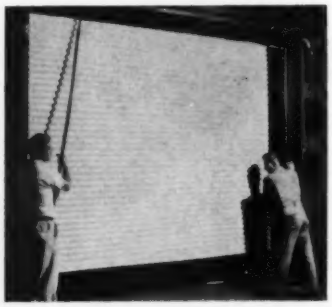
Swartwout ROOF VENTILATORS AND VENTILATING LOUVERS

ALSO AUTRONIC PROCESS CONTROL EQUIPMENT

PRODUCT REPORTS

Rolling Glass Doors

Vue-Lume rolling glass doors feature a wide range of standard sizes for maximum design flexibility. Each of the three basic models — 2 panel-2 track, 3 panel-3 track and 4 panel-2 track — is available in standard heights of 6 ft-10 in. and 8 ft, and 24 standard widths. Additional sizes can be supplied on special order. Fabricated from extra heavy aluminum extrusions in a satin finish, the units are completely weatherstripped and come equipped with locks and latches on the end panels. Rolling screens are available for each model. *Shower Door Co. of America, 1 Permalume Place, N. W., Atlanta 18, Ga.*



Large Corrugated Plexiglas Sheets

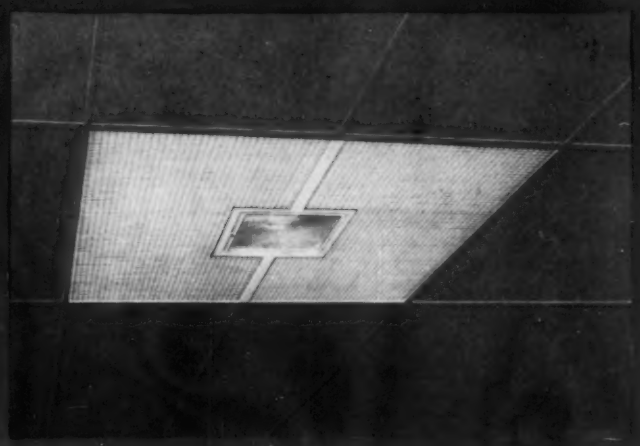
To meet the growing demand for larger, uninterrupted seamless surfaces in plastic and other types of commercial signs, *Amplex* has just introduced extra large corrugated *Plexiglas* sheets in sizes up to 8½ x 10 feet in both colorless transparent and translucent colors. Providing a surface area up to 85 square feet, the new sheets are available in thicknesses of .187 and .250 inches with corrugations of one-inch frequency with ⅜ inch amplitude, and 2½ inch frequency with one inch amplitude. Offering the same surface standards and optical quality as Rohm and Haas' commercial quality, untrimmed acrylic sheet, these extra large corrugated *RL* sheets are expected to have many architectural and decorative applications. *Amplex Manufacturing Co., 2325-31 Fairmount Ave., Philadelphia 30, Penn.*

(More Products on page 294)

Kleinhans' Men's Store, Buffalo, New [illegible]
fixtures by R & W Wiley, Inc., Buffalo, New [illegible]

FOR THE LOUVER THAT ALLOWS YOU COMPLETE FREEDOM OF LIGHTING DESIGN.....

Specify... APL AMERICAN PLASTIC LOUVERS

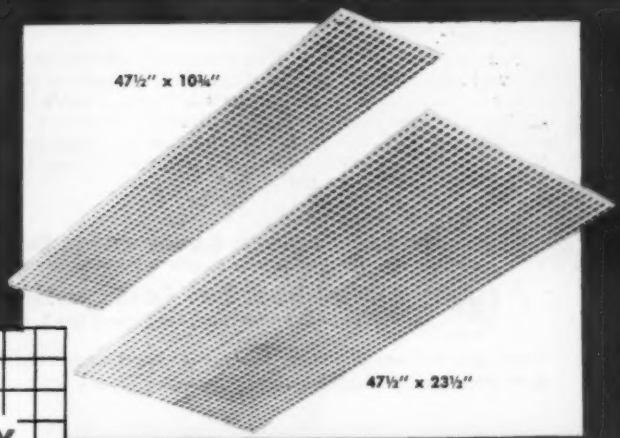


It's a beautiful store—look at the lighting—notice the beautiful installation! For complete ceiling, individual fixtures, troffers, or modular designs, use American Plastic Louvers which combine the finest in lighting with modern beauty. *These interlocking, lightweight plastic louvers fit together without any visible interruption.* Just the right amount of traverse and longitudinal veins give maximum light at minimum brightness without trapping light.

UNEQUALED FEATURES OF AMERICAN LOUVERS...

- Color stable translucent white
- Lighter and easier to handle
- Easier to maintain, with ⅝" cells that permit fingertip grip
- Breaks up sound—reduces room noise
- Permits free air circulation
- Easily sawed, to fit anywhere
- Extreme heat resistance
- 45° x 45° light cutoff

Write for full specifications of American Plastic Louvers today.



AMERICAN LOUVER COMPANY
4240 NORTH SAYRE • CHICAGO 34, ILLINOIS

Movement due to winds and extremes of temperature poses one of the most trying problems for the designer of curtain wall buildings. For not only must the joint material seal out water, it must be flexible as the building moves with the wind and its elements expand and contract with heat and cold. Too, unequal coefficients of expansion of different materials create additional joint stresses.

Hornflex, a thiokol formulation, is especially effective in curtain wall construction for sealing joints between panels of stainless or enameled steel, aluminum panels and glass in needlepoint glazing. The squeeze-stretch range of Hornflex absorbs exceptional stress without loss of bond! It provides an elongation of 325% and stays firm and elastic over a temperature range from *50°F BELOW ZERO to 250°F.*

Laboratory test and job applications indicate that Hornflex, properly installed, will provide excellent protection for periods up to *25 years and more.*

Other uses for Hornflex are to fill and seal surface joints in bridges, highways, swimming pools, etc. It has excellent bond to other building materials including those of dissimilar surface density and structure. Hornflex does not oxidize or absorb moisture; effectively seals joints against air, dust and water.

Hornflex is supplied in a pleasing shade of grey which blends well with aluminum, stainless steel or concrete. It is also available in red, aluminum, white and black.

Like complete details? Call your local Horn representative or write for Hornflex Technical Bulletin to Dept. H56-915.

A. C. Horn Companies Inc.
SUBSIDIARIES AND DIVISIONS
Sun Chemical Corporation
10th Street & 44th Avenue, Long Island City 1, N. Y.

Plants: Houston • Long Island City • Los Angeles • San Francisco • Toronto
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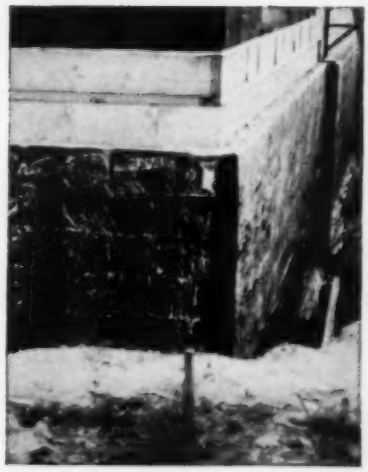
How to **keep water out** of concrete block foundation for life of building

Effective water-proofing of concrete block or concrete foundations has long been a builder's headache. Here is an inexpensive, simple, life-long solution:

1. Mop outer foundation wall with regular tar.
2. Apply 4 mil VISQUEEN film. For an 8 foot wall use 4 foot center fold to avoid seams. Drop film to bottom half of wall after application of top half.
3. Brush down to achieve tight fit.
4. Backfill. VISQUEEN film is inert and will last for the life of the building.

For the name of your nearest dealer write the VISKING Company.



VisQueen Trade Mark film is all polyethylene, but not all polyethylene is VISQUEEN.
Only VISQUEEN film has the benefit of research and resources of VISKING Company.

PLASTICS DIVISION
VISKING COMPANY *Division of* UNION CARBIDE *Corporation*
P.O. Box 1410 Terre Haute, Indiana
In Canada: Visking Limited,
Lindsay, Ontario.

NOW... ALL COLORS...
REPRODUCE PERFECTLY
MARS-LUMOCHROM
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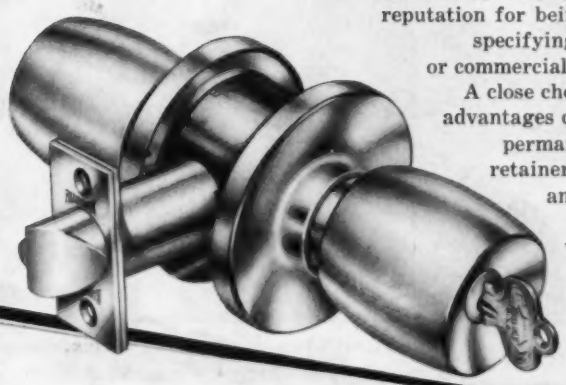
MARS-LUMOGRAPH
2029
J.S. STAEDTLER

ROUGH RESISTANT

STILEMAKER DOORWARE

This heavy-duty cylindrical lock line has earned a schoolwide reputation for being *rough-resistant*...a point to consider when specifying doorware for any type of institutional or commercial building.

A close check of Stilemaker construction will reveal the advantages of such features as...a full ⅝" throw permanently lubricated latch bolt; concealed knob retainers; long knob shank bearing for knob rigidity and many others. All the facts are available in concise form. Consult your Russwin Specialist or write Russell & Erwin Division, The American Hardware Corporation, New Britain, Conn.

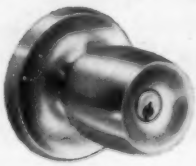


RUSSWIN®
distinctive doorware

As well as Attractively-Styled

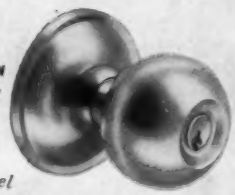
ERA DESIGN
in cast brass, bronze or aluminum

FLARE DESIGN
in cast brass, bronze or aluminum
COSMIC* DESIGN
in wrought brass, bronze or aluminum



COMET DESIGN
in cast brass, bronze or aluminum

BRISTOL DESIGN
in cast brass, bronze or aluminum
HADDAM* DESIGN
in wrought brass, bronze or aluminum



MONO DESIGN
in cast brass, bronze or aluminum

*Can be furnished in stainless steel

Welton Becket and Assoc. selects BIGELOW CARPET for GOLDWATER'S New Main Store in Phoenix

Welton Becket and Associates is one of America's well-known architectural firms with offices in this country and as far distant as Cairo and Honolulu.

Among their design accomplishments are the Beverly Hilton Hotel in Beverly Hills, Cal., Southland Center in Dallas, Texas, the U.C.L.A. Medical Center in Los Angeles and the Prudential Life Insurance Building in that city.

A recent project of Welton Becket and Associates was the new main store of Goldwater's in Phoenix, Arizona. In planning and designing, particular care was given to the selection of the carpeting since it had to be not only appealing and visually attractive, but also must stand up under the heavy traffic a popular store attracts.

The carpet finally selected as being ideal for Goldwater's was an extra-deep pile version of Bigelow *Gropoint Cushionlok*,® a hard-wearing, sound-killing carpet of tailored simplicity.

The architects felt that this specially woven carpet combined the style, luxury and long-wearing qualities required for an installation like Goldwater's.

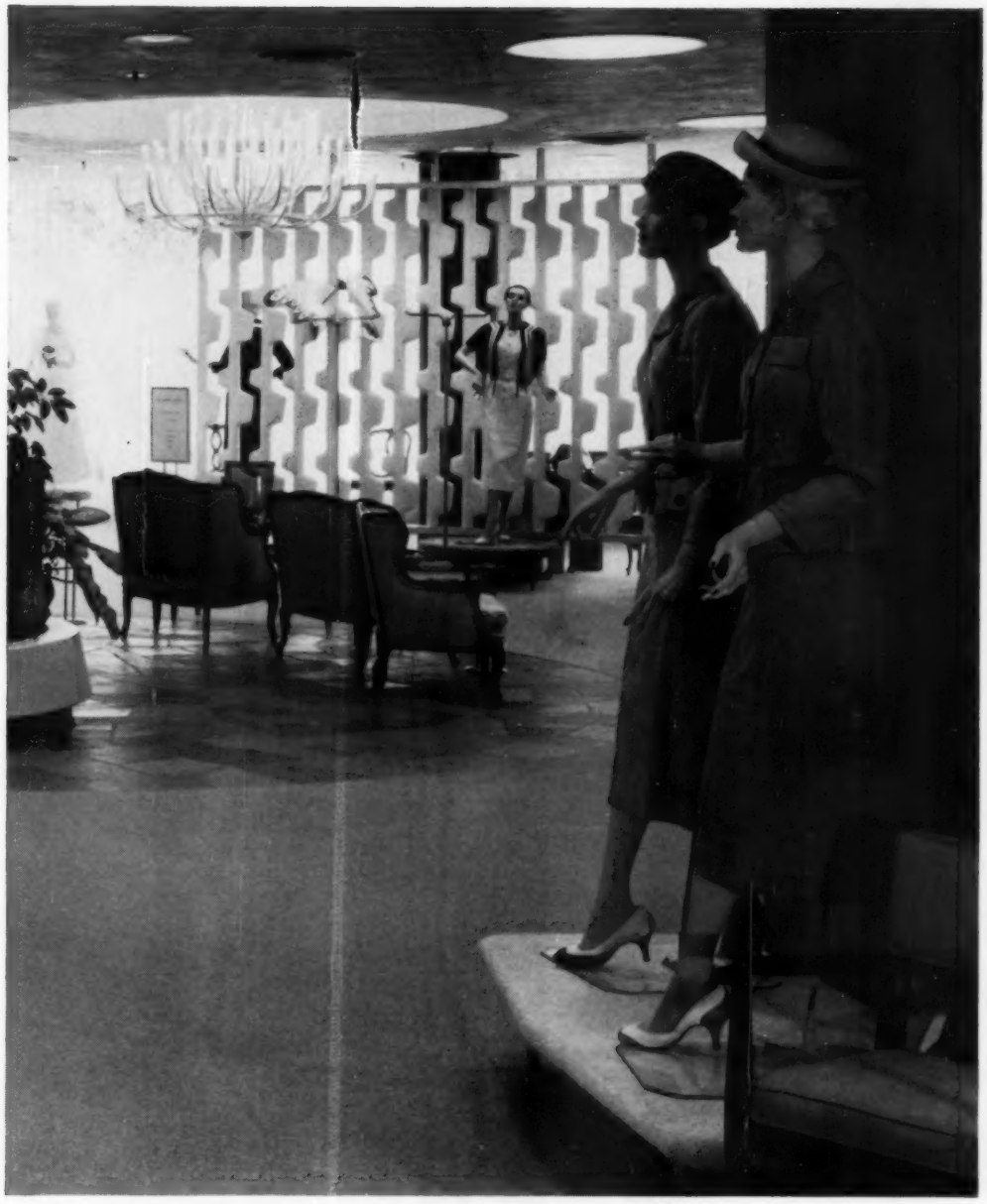
If you're planning an installation, it will pay you to consult with Bigelow carpet specialists for the proper color, pattern and weave . . . at a price your client can afford. There is no charge for this service.

You may contact Bigelow through the nearest sales office or by writing to Bigelow Contract Dept., 140 Madison Avenue, New York 16, N. Y.

Luxurious décor calls for a luxurious carpet and for Goldwater's the selection was Bigelow's *Gropoint Cushionlok.*

BIGELOW
Rugs – Carpets

Bigelow



. . . fine rugs and carpets since 1825

Bigelow sales offices are located in the following strategic cities: Atlanta, Ga.; Boston, Mass.; Buffalo, N. Y.; Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio; Dallas, Tex.; Denver, Colo.; Detroit, Mich.; Hartford, Conn.; High Point, N. C.; Kansas City, Mo.; Los Angeles, Calif.; Minneapolis, Minn.; New York, N.Y.; Philadelphia, Penna.; Pittsburgh, Penna.; St. Louis, Mo.; San Francisco, Calif.; Seattle, Wash.

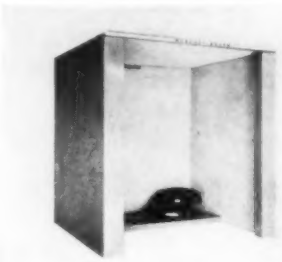
PRODUCT REPORTS

Link System Electrical Outlets

The *Snapit Inter-Link* multiple electric outlet system consists of interlocking, interchangeable electrical outlet units that measure a foot in length and can be installed either horizontally or vertically. With housings of ivory-colored *Beetle* urea plastic, the system is available in five different units including links with or without outlets, and flexible strips to fit around doors, corners, etc. Each length has two No. 12 conductors, rated 15 amperes-125 volts. Six small household appliances can be plugged in with safety to a system stemming from a single built-in wall receptacle, thereby eliminating the dangerous tangle of cords stemming from one outlet. *Cable Electric Products, Inc., Providence, Rhode Island.*

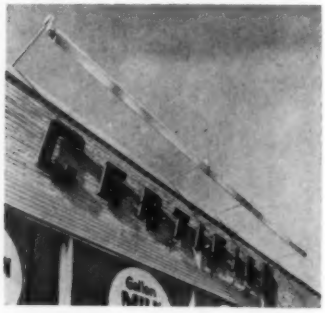
Glass Fiber Self-Insulated Duct

G-B Duct, a new, round, glass fiber air duct for residential heating and air conditioning use, may be utilized as the complete duct system in conventional duct installations, as the runouts from metallic extended plenums, and as sound absorbers in existing systems. According to the manufacturer, installation is easier and thermal and acoustic efficiency improved. Manufactured in standard sheet metal I.D. sizes of 4, 5, 6, 7, 8, 9, 10, 12, and 14 inches, *G-B Duct* comes in six-foot sections. Packaged "sets" are also available for 2 and 3 ton attic-mounted installations. *Gustin-Bacon Mfg. Co., Kansas City, Missouri.*



Acoustically Treated Phone Booth

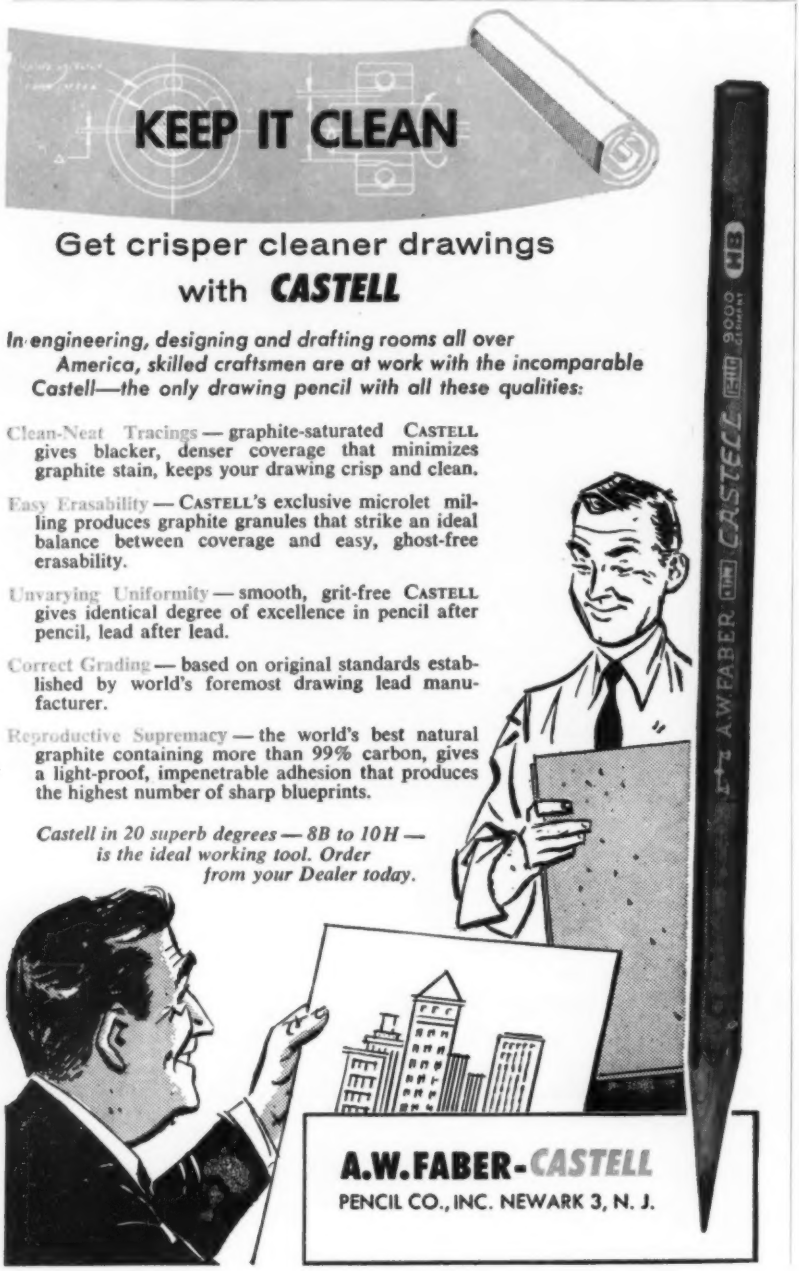
A semi-enclosed telephone booth is acoustically treated to give exposed telephone installations "closed" privacy. Furnished for interchangeable mounting on wall or desk, the Model U-10 *Acousti-Booth* is easily installed and requires no wire connections. Standard colors are light ivory inside, silvery gray outside; size is approximately 30 in. high, 30 in. wide and 28 in. deep. *General Sound Control, Inc., 6711 S. Sepulveda Blvd., Los Angeles, Calif.*



Outdoor Display Lighting Fixture

A new outdoor fluorescent lighting fixture with reflectors available in 4, 6 and 8 foot lengths, the *Fluoresign* outdoor luminaire employs high output rapid-start lamps for illumination, giving 10 times the rated life of incandescents, according to the manufacturer. Useful for illuminating poster panels, painted bulletins, signs, and other vertical surfaces, the fixture's reflectors may be installed singly or in combination. When an unusually large area is to be illuminated, double rows of fixtures may be installed with special fittings from the manufacturer. *Revere Electric Mfg. Co., 6009 Broadway, Chicago 40, Ill.*

(More Products on page 302)


KEEP IT CLEAN
Get crisper cleaner drawings
with CASTELL
In engineering, designing and drafting rooms all over America, skilled craftsmen are at work with the incomparable Castell—the only drawing pencil with all these qualities:
Clean-Neat Tracings — graphite-saturated CASTELL gives blacker, denser coverage that minimizes graphite stain, keeps your drawing crisp and clean.
Easy Erasability — CASTELL's exclusive microlet milling produces graphite granules that strike an ideal balance between coverage and easy, ghost-free erasability.
Unvarying Uniformity — smooth, grit-free CASTELL gives identical degree of excellence in pencil after pencil, lead after lead.
Correct Grading — based on original standards established by world's foremost drawing lead manufacturer.
Reproductive Supremacy — the world's best natural graphite containing more than 99% carbon, gives a light-proof, impenetrable adhesion that produces the highest number of sharp blueprints.
Castell in 20 superb degrees — 8B to 10H — is the ideal working tool. Order from your Dealer today.
A.W.FABER-CASTELL
PENCIL CO., INC. NEWARK 3, N. J.

SHEET METAL WORK:

a. Sheet metal duct work. Contractor shall provide all heat, vent and exhaust ductwork, registers, grilles, diffusers, screens, exhausters, ventilators, etc., shown on drawings or as may be required. All supply and exhaust sheet metal ducts shall be constructed of "WEIRKOTE" zinc-coated steel, and not less than 26 gage . . .

FOR GREATER DURABILITY AND ECONOMY--
SPECIFY WEIRKOTE® ZINC-COATED STEEL

You see it more and more: building specifications sheets that *insist* on Weirkote zinc-coated steel.

And no wonder. For Weirkote assures longer life and less maintenance in such building components as duct-work, window and door casings, paneling, decking, roofing and siding, and rain drainage items. And Weirkote is so economical compared with other materials.

Weirkote is produced by a continuous galvanizing process that gives it a skin-tight zinc coating that won't flake or peel during toughest fabricating operations. Weirkote fights corrosion to a standstill. It will take plenty of knocking around on the job, because it's *tough* steel.

In every way, Weirkote provides the fine finishing touch that architect, contractor and building owner can always be proud of.

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Send for the new Weirkote booklet today. Write Weirton Steel Company, Department 8-Q, Weirton, W. Virginia

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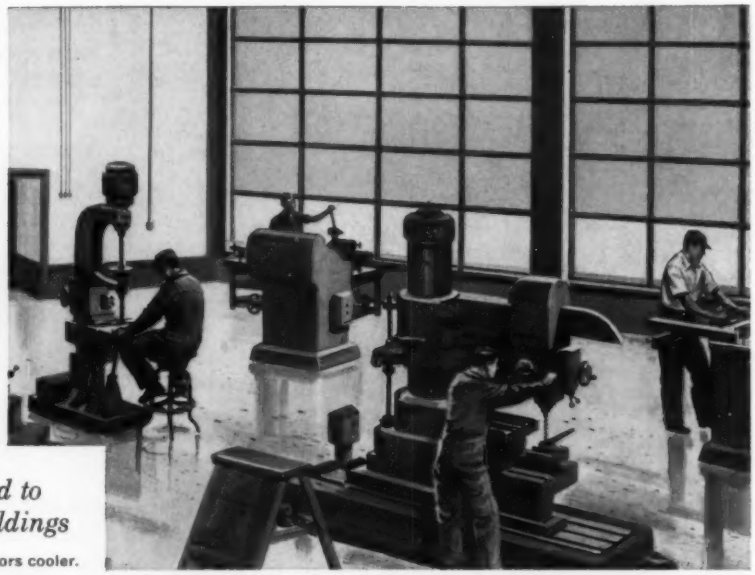
NATIONAL STEEL CORPORATION

Presenting...SOLARGRAY™

Pittsburgh's latest contribution

- *This Plate Glass has excellent brightness and glare control.*
- *It offers complete freedom from color problems in daylight.*



Ideally suited to all types of buildings

SOLARGRAY keeps interiors cooler.

- It reduces eyestrain and fatigue among the building's occupants.
- It protects delicate electronic instruments.
- It reduces sun-bleaching of fabrics.
- It cuts air-conditioning costs.

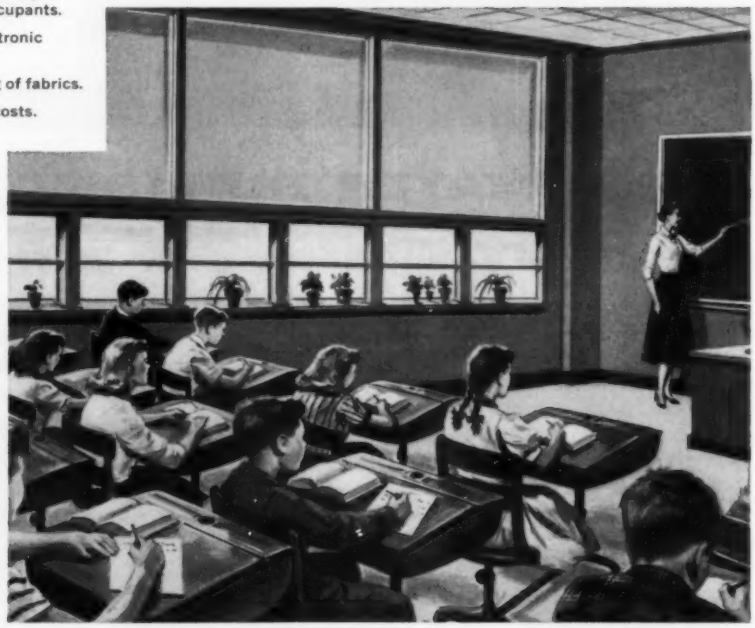


PLATE GLASS
to the building field

- *It has a high degree of solar heat control, with a pleasing neutral color.*
- *It is a new approach to environment-controlling glass.*

SOLARGRAY is a neutral gray Plate Glass, possessing exceptional resistance to sun glare, with great heat-absorbing properties. It was especially developed by Pittsburgh Plate Glass Company to fill the need for a Plate Glass which would reduce the annoying heat and brightness of the sun, and at the same time permit maximum entrance of comfortable, relaxing daylight into the building's interior.

Architects have found *Pittsburgh's* SOLARGRAY Plate Glass to be a high-quality, utterly dependable structural material in literally every kind of building. Moreover, SOLARGRAY has proved its ability to reduce the load on air-conditioning systems, thereby producing sizable savings both in the operation of the system and in the initial cost of the equipment. It is available up to a maximum size of 120″ x 220″, and in ¼″ and ⅜″ thicknesses.

For complete information on SOLARGRAY, contact your nearest *Pittsburgh* branch or distributor. Meanwhile, fill in and return the coupon for our free booklet which gives further details on this new heat-absorbing, glare-reducing Plate Glass.

solargray T.M.

the heat-absorbing, glare-reducing Plate Glass

Write for free folder

PLEASE PRINT

Pittsburgh Plate Glass Company
Room 7366, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.

Without obligation, please send me your free folder on Pittsburgh's new SOLARGRAY heat-absorbing, glare-reducing Plate Glass.

Name .....

Address .....

City ..... **State**.....

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS · FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

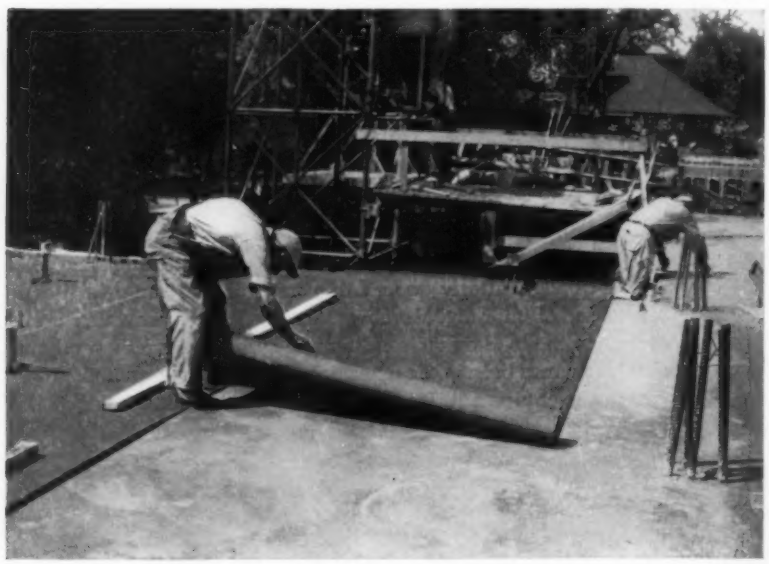
PRODUCT REPORTS

Immersion Steam Boilers

According to the manufacturer, improved design has made it possible for Sellers' gas-fired immersion boilers to be used on the main floors of one-story buildings without danger of noise or fumes entering adjacent rooms. Air supplied by a positive pressure blower is mixed with gas and passed to burners in a completely closed combustion chamber. To insure complete combustion and eliminate fumes, secondary air is bypassed direct from blower to combustion chamber under sufficient pressure to overcome any vacuum in the building or back draft on the chimney. The closed combustion chamber and secondary air supply eliminate open flames, resulting in reduced fire hazard and quieter operation. The *Model 77* boiler with "straight through" single pass firing comes in sizes from 10 to 65 hp; the larger *Model 105* comes with capacities from 80 to 400 hp. *Sellers Engineering Co., 4876 N. Clark St., Chicago 40, Ill.*

Plastic Flashing Material

Nervastral Rigid, a recently developed plastic flashing material, is said to have sufficient impact resistance, tensile strength and hardness to permit its replacing metal for flashing, at a substantial saving. According to the manufacturer, other advantages include corrosion resistance, good thermal insulation value, flexibility and dimensional stability. The material is available in rolls 144 ft long, in widths of 12, 24 and 36 inches. Standard gage is 20 mils, although the rigid sheet can also be supplied in gages of 7½ or 10 mils for such applications as preformed through-the-wall flashing units. *Rubber & Plastics Compound Co., Inc., 10 Rockefeller Plaza, New York 20, N. Y.*



Protective-Curing with Orange Label SISALKRAFT means Better Concrete

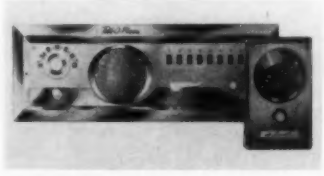
Rolled over new concrete, Orange Label Sisalkraft assures complete, uniform curing. It retains the original moisture in the mix — no additional water is needed. Strong, durable, dust-free concrete results . . . at a lower material and labor cost than with any other method. Tough, waterproof, scuff-proof Orange Label Sisalkraft also protects the slab during and after curing — keeps debris and workman traffic from marring or staining the concrete.

American SISALKRAFT Corporation

Chicago 6 • New York 17 • San Francisco 5

Other Products in the SISALKRAFT LINE

Sisalkraft Moistop — Permanent vapor barrier
Sisalkraft Vaporstop — Rot resistant vapor barrier
Sisalation — Reflective insulation and vapor barrier
Copper Armored Sisalkraft — Electro sheet copper for permanent waterproofing and concealed flashing.
Sisalite — Pure polyethylene film
Sisal-Glaze — New plastic glass replacement



All Transistor Intercom-Radio

A new, all-transistor home intercom-radio system, *Talk-a-Phone* uses no tubes, emits no heat, and the transistor circuit lasts indefinitely, according to the manufacturer. Bringing complete intercommunication as well as radio all through the house, the units can be flush-mounted or surface-mounted. *Talk-A-Phone* units are finished in blended gold, polished and satin silver tones. *Talk-A-Phone Co., 1512 So. Pulaski, Chicago 23, Ill.*

Decorative Wall Murals

Murals fashioned of *Hermosa* glazed ceramic tile combine decorative color and warmth with the advantages of a durable, easily maintained wall surface. Handcrafted in a wide range of colors and designs, the murals have found particular acceptance in church design. An outstanding example is the 4½ by 6 ft hand bulbed religious mural shown above. Created for Our Lady of Perpetual Health Church in Puerto Rico, it employs colors of green, brown, blue and gold on a champagne background. *Gladding, McBean & Co., 2901 Los Feliz Blvd., Los Angeles, Calif.*

(More Products on page 306)

Finest complement to
modern building design . . .

THIS PERFECT DOOR-TRIM COMBINATION!

The perfect blending of both beauty and performance has made Corbin Door Trim the first choice in finishing hardware. Corbin's advanced styling, faultless precision, and smooth, luxurious operation speak quality *throughout* your new buildings . . . meet every requirement for the architect's creative designs . . . minimize installation costs and maintenance.

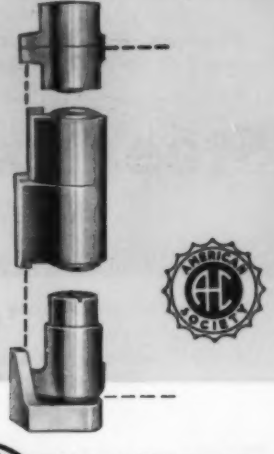
Ask your dealer for full information about Perfect Door Trim by Corbin. Also, about other finishing hardware from Corbin's complete line—the world's most widely used builders' hardware!

CORBIN "400" Door Closer

World-famous for compactness, trouble-free, long life, and low cost per year of service. The Corbin "400" is recognized as the strongest, most versatile door closer ever made. Modern streamlined design projects but 1¾" from door face. One size housing in 5 spring sizes effectively handles *any* door closer installation. Multiple speed and "silence" adjustments provide any combination of latching and closing — with *no audible contact* between door and stop. Available with hold-open attachment and fusible link arms.

CORBIN Heavy Duty UNIT Locks

Time-tested in many of America's largest buildings. Striking simplicity of the Melody Design is distinctive of the solidity and strength of all Corbin UNIT Locks. Locksets are pre-assembled for easy, fast *one-piece* application — fine, accurate lockmaker's adjustments are never disturbed. No mortise required. Available in 20 functions. Cast brass, bronze or aluminum metals in all popular finishes. Also, Corbin "900 Series" UNIT Locks . . . a smaller UNIT lock designed for schools, hospitals, commercial, industrial, and public buildings.



CORBIN Pivot Hinges

(Adjustable Ball Bearing)

The finishing hardware touch for perfect door performance. Corbin Pivot Hinges are truly anti-friction — thrust and radial loads are absorbed by separate bearings. Adjustment is provided for equal distribution of load on the pivots. Top, Intermediate, and Bottom hinges may be used in various combinations to meet all door requirements.

P & F CORBIN
Division
The American Hardware Corporation
New Britain, Connecticut

Good buildings deserve CORBIN Hardware

Steeltex eliminates costly pre-construction engineering required by other centering materials. It gives clean, dependable reinforcing form in any lengths needed regardless of variation in joist spacing. Steeltex is light, easy to handle.

Steeltex speeds college construction

Contractors tell of money-saving advantages gained from Pittsburgh Steel's floor lath on Purdue and University of Kentucky jobs

The critical need for new school buildings to handle our expanding population is also acute on college campuses.

At Purdue University and University of Kentucky, where married veterans and their families are crowding housing facilities, big construction programs are underway. At both universities, Steeltex wire mesh reinforcing floor lath was specified by architects because it helps achieve the most value for each construction dollar.

Purdue is engaged in a $9½ million project to house married students in a unique 58-building development located on a 30-acre site at the edge of the West Lafayette, Indiana, campus.

In Lexington the University of Kentucky is building the $2 million Shawneetown married students and faculty housing project on a 10-acre site adjacent to the campus to provide 186 apartments for married students and faculty members.

In Indiana, since economy of construction was an important factor to university authorities, Architect John R. Diehl of Fairless Hills, Pennsylvania, specified Pittsburgh Steel Products' Steeltex, the reinforcing that carries its waterproofed form right on its back.

The 370,000 square feet of Steeltex, used to cover joists on the first and second floors of the units, will return substantial savings in time and money while assuring durable concrete floors.

John W. Galbreath & Co., Columbus, Ohio, teamed with Turner Construction Co. of New York City to form Galbreath-Turner, general contractors for the construction.

Earl Wooten, superintendent for Carl Vestal, Inc., Indianapolis, sub-contractor who installed the Steeltex, gave this estimate of the time saved by using Steeltex to cover 370,000 square feet of floors.

"If we had used another material, each of these 58 buildings would take six days and require 20 men's services. With Steeltex, however, we needed only one and one-half days and the services of five men for each building."

Similar commendation came from the Kentucky project where Ben Landin, general superintendent for the Hargett Construction Co., of Lexington, said:

"I like Steeltex because of the installation speed. If we had to use a reinforcing material that required wooden forms, it would call for a heavier slab—about four inches thick. But with Steeltex, we need only a 2¾-inch slab which gives us lighter-weight construction.

"Another advantage is that Steeltex provides lateral stability for the joists. A stronger structure is the result.

"I believe that Steeltex is far superior to any other type of material for fitting around irregular-shaped objects quickly and snugly. We don't waste as much concrete and we complete the job faster."

And Lewis H. Hargett, president of the contracting firm, cited these Steeltex advantages: "It's economical, it's convenient to install and the men on the job don't need any special training to install it."

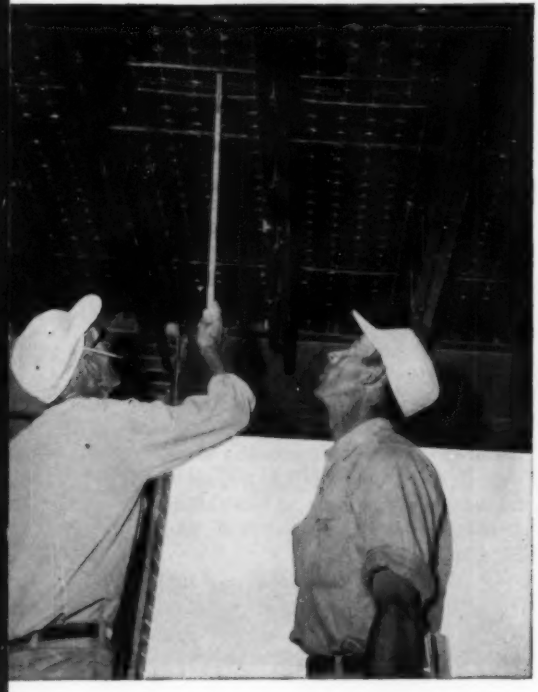
He added, "In recent years, we've used several hundred thousand square feet of Steeltex and found it completely satisfactory. After checking the cost of Steeltex over other materials, we find there is a definite saving per square foot in using Steeltex."

These same advantages can work for you when you use Steeltex, sold by the Pittsburgh Steel Products Division of Pittsburgh Steel Co. Start pocketing these savings now. You can do that by picking up your telephone now and getting in touch with one of the trained engineers waiting to help you in each of the district offices listed below. Do it today.

Pittsburgh Steeltex is installed faster than alternate materials. Here it's being installed at the University of Kentucky's housing project.

Steeltex fits around irregular piping, vents and projections. Easy to cut, it speeds construction and saves money.

Superintendent Ben Landin (left) of Hargett Construction Co. points to clean, neat appearance of Steeltex under concrete slab to Superintendent Jim League, Whalen Erecting Co. which installed Steeltex.



Steeltex®

Pittsburgh Steel Products

a division of Pittsburgh Steel Company

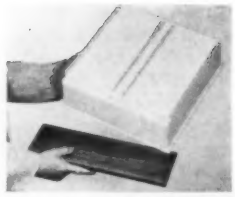
Grant Building • Pittsburgh 30, Pa.

District Sales Offices

Atlanta	Cleveland	Dayton	Los Angeles	Pittsburgh
Chicago	Dallas	Detroit	New York	Tulsa
		Houston	Philadelphia	Warren, Ohio

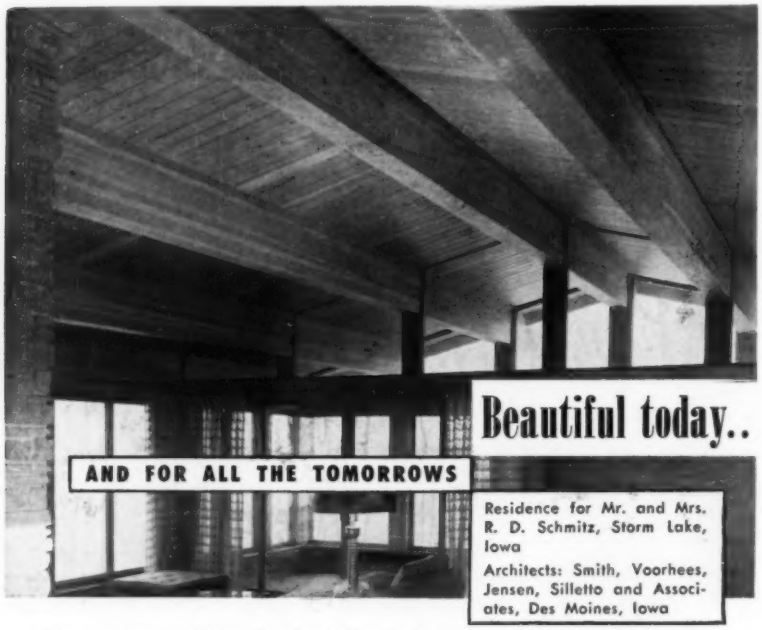
Water-Level Deck Drain

A newly perfected drainage system that brings the water level of swimming pools nearer deck level features a drainage trench completely surrounding the pool and set back from the edge. Overflow gutters are eliminated and waste is washed over into the trench, which is covered with a closely-apertured slip-resistant grille. Because drains at the bottom of the trench direct overflow water through filters and back in to the circulating system, sanitation is increased and operating costs reduced. Water level is controlled and regulated by adjustable Weir plates set in short trenches at the vertical face of the pool. *Norman Boosey Mfg. Co., 5281 Avery Ave., Detroit 8, Mich.*



Molded Styrene Drawers

A new line of molded styrene furniture drawers features integrally molded end and center guides, vertical fronts, supported rims and jointless, rounded corners. Produced in one piece by injection molding, the drawers are said to be uniform to the point of interchangeability, and to resist warping, swelling or shrinking. Standard drawers in beige and black are molded with flange fronts to accommodate wood facings to which any number of colors and patterns may be applied. The facings themselves are mounted simply by saw cutting them to fit the flange and cementing them in place. The drawers are made in two stock sizes, 32 by 16 by 5 inches and 15½ by 16 by 5 inches. *Prolon Plastics Div., Pro-Phy-Lac-Tic Brush Co., Florence, Mass.*


Beautiful today..
AND FOR ALL THE TOMORROWS
Residence for Mr. and Mrs. R. D. Schmitz, Storm Lake, Iowa
Architects: Smith, Voorhees, Jensen, Silletto and Associates, Des Moines, Iowa

Time gives to Rilco laminated woods a warmth and richness and depth of beauty impossible with other materials. Rilco laminated wood beams, for example, age gracefully while resisting warping, checking, splitting.

Such beams offer availability plus economy, for Rilco beams are obtainable in sizes difficult or impossible to get in solid construction. They can be flat, pitched or tapered with or without cantilevered overhang.

Standard-size flat beams are now stocked by Rilco . . . assuring prompt delivery and the low price of volume production.

Whether you are designing a residence, church, school, industrial or commercial building Rilco beams, arches, trusses and wood roof deck offer beauty at surprising savings.

Rilco laminated beams and deck blend with the modern furnishings and add a feeling of spaciousness.

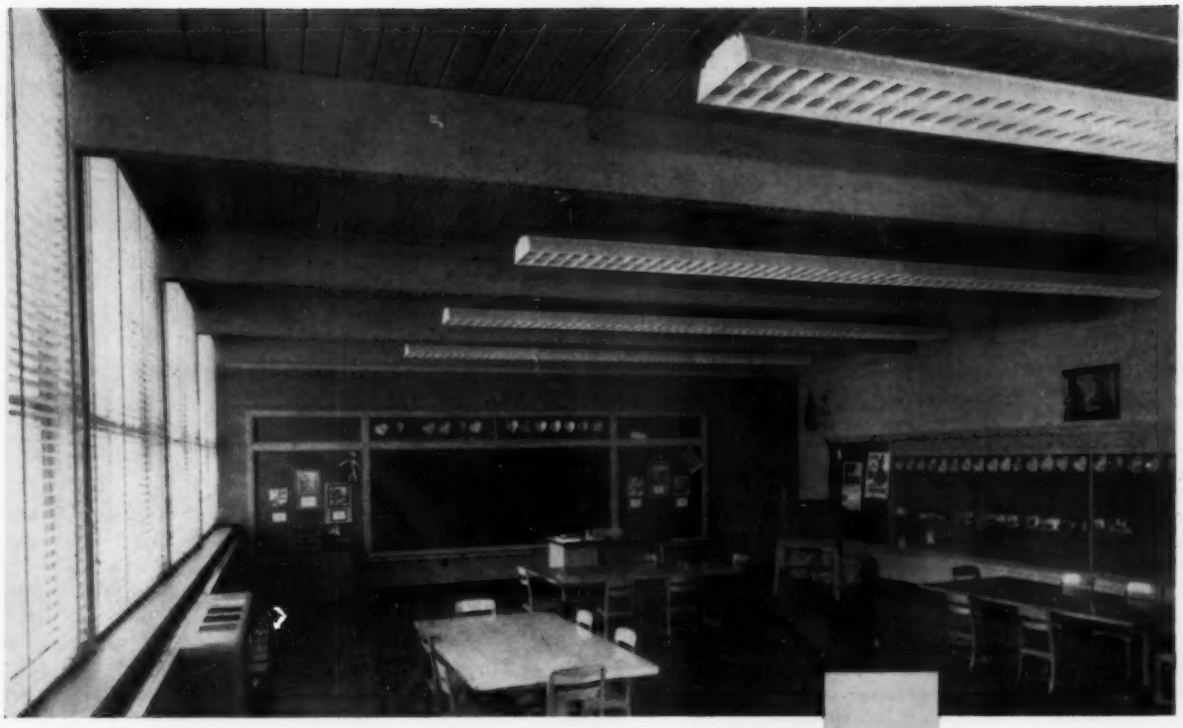
RILCO
works wonders with wood

RILCO LAMINATED PRODUCTS, INC.
W818 1st National Bank Building, St. Paul 1, Minnesota
DISTRICT OFFICES
TACOMA, WASHINGTON FORT WAYNE, INDIANA
NEWARK, NEW JERSEY

Ratchet-Fastened Fixture Flange

Ro-Tile, a new Curtis flange fastening, holds the ceiling flange to the recessed fixture through an internal ratchet mechanism without the aid of screws, nuts, or hinges. To remove the flange for access to the bulb or reflector, the flange is simply rotated. Available on Curtis recessed incandescent fixtures such as the *Vari-Spot*, *Punchy* and *Spotty* downlights, the *Ro-Tile* feature gives the flange an unbroken, clean ceiling plane, since its surface is completely free of any fastening devices, such as screwheads. *Curtis Lighting Co., Inc., 6135 W. 65th St., Chicago 38, Ill.*

(More Products on page 308)



Walcott School, Walcott, Iowa,
Architect L. G. Soenke, Davenport, Iowa

Our Kids Deserve—

FIRE RESISTIVE *Schools!*

. . . and they can have them with UNIT Glued Laminated Wood Construction!

NEW FILM - An interesting new 16mm sound and color film entitled GLUED LAMINATED WOOD ARCHES available free for group showings. Write for Details.

What could be more desirable than a school that incorporates all the beauty and charm of wood. . . . . and is also fire resistive? It is a proven fact that glued, laminated wood structural members are safer in case of fire . . .* no danger of sudden collapse which can so easily happen with other unprotected structural materials . . . . . and that's only part of the story. The true economy which is achieved through the use of UNIT laminated wood construction is so important in today's budget-conscious building programs.

If you are planning a school now and want the very best, write for the facts on fire resistive, economical laminated timber construction.

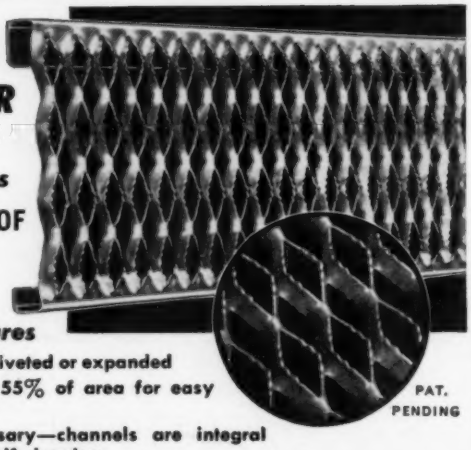
* After a serious fire started by debris during the construction of a new super market, architect Doak Martin of Worcester, Mass. stated . . . "I am pleased with the performance of wood as it is obvious had the members been made of unprotected steel - they would have deformed under the extreme heat." . . . . . The Unit laminated arches in this super market were merely resanded to remove the char formed during the fire and construction continued without costly delay.

UNIT STRUCTURES INC.
PESHTIGO, WIS. • MAGNOLIA, ARKANSAS
DISTRICT OFFICES - Kansas City, Detroit, Grand Rapids, Boston, Chicago, Milwaukee, New Orleans, Houston

two superior open steel
FLOOR GRATINGS
BY GLOBE

1 Safety GRIP-STRUT®

FOR MAXIMUM SAFETY ALL OVER YOUR PLANT



Important Safety Features

★ FIRE PROOF ★ SLIP PROOF
★ MAXIMUM STRENGTH
★ MINIMUM WEIGHT

Important Economy Features

★ All one piece, not welded, riveted or expanded
★ Open space in excess of 55% of area for easy access of light and air
★ No extra supports necessary—channels are integral part of the material. ★ Self cleaning
★ Cut and installed like lumber by your own maintenance force. ★ Low in original cost. ★ For balconies, no secondary sprinkler heads needed

Ideal for work platforms, stair and ladder steps, flooring, balconies, catwalks, machinery guards, fire escapes and for original equipment safety treads.

2 GOLD NUGGET® WELDED grating

PAT. PENDING

The QUALITY GRATING for Heavy Duty Applications

★ 3/16" projection weld nugget for greater rigidity and strength
★ Vertical alignment of the main load bar assured
★ All bars are load carrying bars including secondary bars
★ Anti-skid pattern

PROJECTION WELD

Each secondary load bar (A), as projected welded to the primary load bar (B) has a shear strength of 5,000 pounds per weld. There are 28 such projection welds to a square foot of grating. This means that GOLD NUGGET Welded Grating can sustain greater shock loads than other gratings.

For the complete details of these revolutionary new gratings, write for new catalogs today. Distributors in all principal cities. Consult the yellow pages in your phone book under "GRATING".

108

PRODUCTS DIVISION

The **GLOBE** *Company* MANUFACTURERS SINCE 1914

4020 SOUTH PRINCETON AVENUE • CHICAGO 9, ILLINOIS

Daylight-Controlling Dome

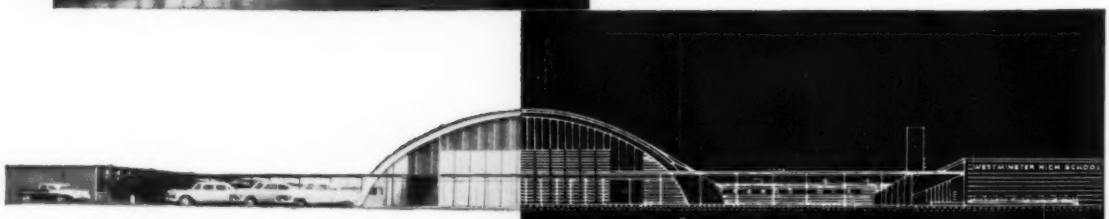
Embedded in the new *Wascolite Reflectadome* is a special fabric which is said to transmit less than fifty per cent of instantaneous heat, and to give a light transmission curve with a deviation of not more than fifty per cent between the hours of 8:00 A.M. and 4:00 P.M. According to the manufacturer, the *Solatex Silver* fabric maintains this balanced light transmission by not only reflecting the perpendicular rays of the sun during the day, but by also catching low angle morning and evening sunlight and deflecting it downward. The *Reflectadomes*, which are made of acrylic plastic and mounted in an aluminum frame, can be supplied in sizes ranging from 20 by 20 inches to 99 by 119 inches. *Wasco Products, Inc., Bay State Rd., Cambridge 38, Mass.*

Double Dome Skylight

New double dome skylights made of glass fiber reinforced polyester plastic are available in both self-flashing and curb-mounted models in a wide range of sizes. Hermetically sealed, two domes are bonded together permanently to form an insulating air space which also helps eliminate condensation. The two dome skins are bonded in a single unit making metal parts unnecessary and eliminating a major maintenance problem. Shatterproof high strength, excellent light diffusion, and thermal insulation are its distinctive features, according to the manufacturer. *Corrulux Division, L.O.F. Glass Fibers Co., P. O. Box 20026, Houston 25, Texas.*

(More Products on page 312)

12veneer
12-veneer offers opportunities for unusual and dramatic concepts in design and decoration wherever interior tile are used. This 11⅞ x 11⅞ x ⅜ tile is available in 20 decorator colors including the six shown at left.
GLAZED QUARRY TILE
Frostproof tile . . . perfect for store fronts, swimming pools, feature walls and decorative inserts . . . 20 decorator colors. Sizes: 2¼ x 8 x ¾, 6 x 6 x ½, 6 x 6 x ¾, 3⅞ x 8 x ¾, 3⅞ x 12 x ¾ and matching trim units.
QUARRY TILE
Now 6 earth colors that harmonize with or compliment any color scheme. Scratchproof, fireproof, acidproof. Sizes: (red) 6 x 6 x ½, 6 x 6 x ¾, 2¼ x 8 x ¾, 3⅞ x 8 x ¾, 3⅞ x 12 x ¾, 6 x 9 x ¾ and trim units. Colors other than red: 6 x 6 x ½ and trim units.
FAMOUS Summitville QUALITY IN ALL 3
Summitville has been famous for quality for over thirty years. From this experience has come the "know-how" and facilities to produce three *outstanding* products . . . 12-veneer and frostproof glazed quarry tile in 20 decorator colors and quarry tile in 6 natural clay colors. • Remember . . . *when you specify Summitville, you specify unsurpassed quality.* • Contact your local ceramic tile contractor or write direct to
SUMMITVILLE, OHIO
MEMBER • TILE COUNCIL OF AMERICA, Inc
Summitville Tiles Inc.



DESIGN ECONOMICALLY WITH FULL FREEDOM

High School, Westminster, S.C.
Architect: Harold Woodward

Wolmanized®

PRESSURE-TREATED LUMBER

Westminster High School was built for $7.69 per square foot by using contemporary design and modern Wolmanized® pressure-treated timber products. Pressure-treated arches, posts, beams and decking afforded economical construction . . . a structure of decided aesthetic appeal. The glulam timber design effected a $130,000 saving at a contract price of $393,893 for the building.

If you are designing schools, churches and similar buildings—see for yourself how Wolmanized pressure-treated lumber can effect substantial savings with full design freedom, structural strength, permanency.

W-39

Name_____

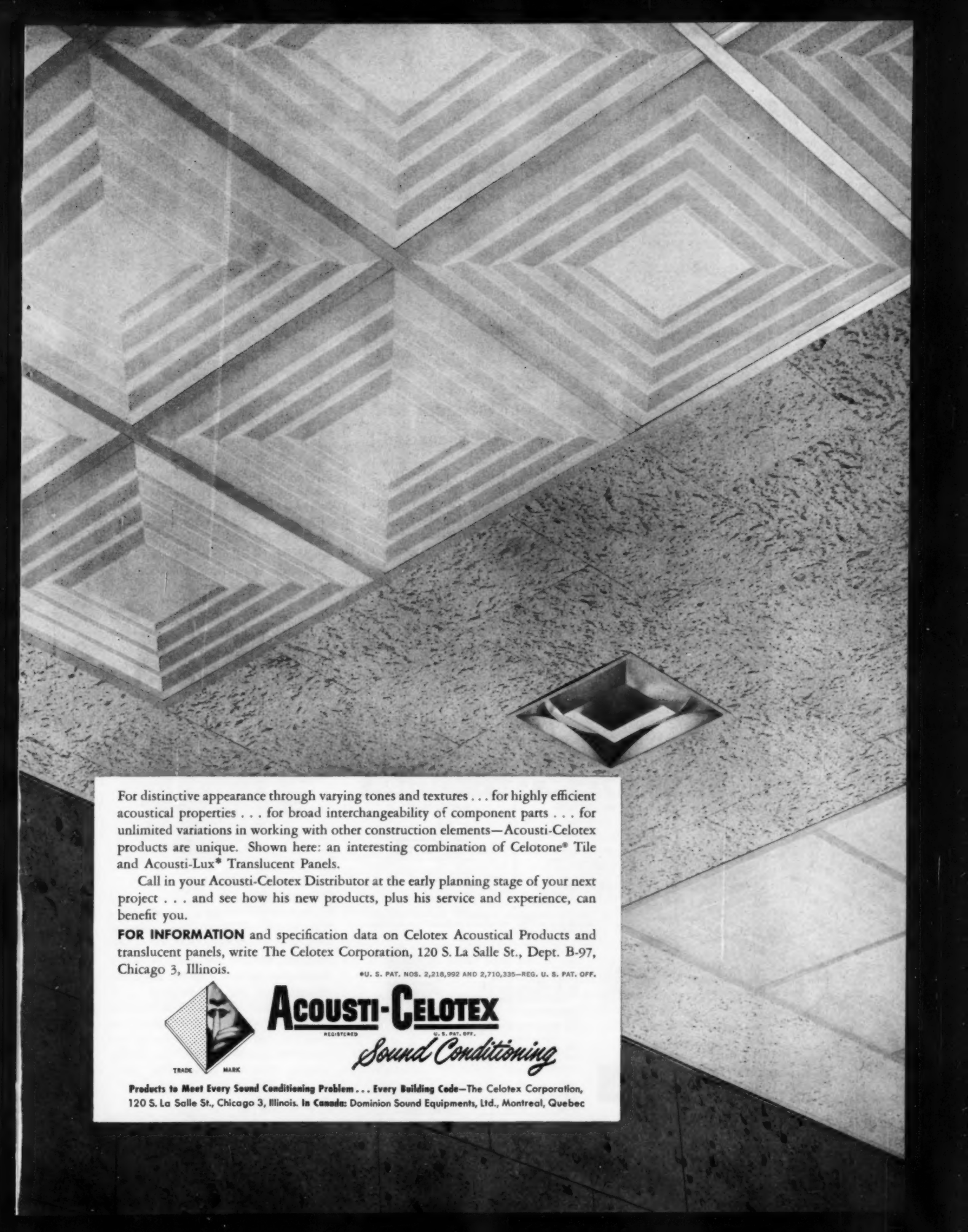
Firm_____

Address_____

City, Zone, State_____

Please send me the 16-page Handbook on the use of Wolmanized pressure-treated lumber in light and heavy construction.

Wolman Preservative Dept., Koppers Company, Inc.
1451 Koppers Building, Pittsburgh 19, Pennsylvania



For distinctive appearance through varying tones and textures . . . for highly efficient acoustical properties . . . for broad interchangeability of component parts . . . for unlimited variations in working with other construction elements—Acousti-Celotex products are unique. Shown here: an interesting combination of Celotone* Tile and Acousti-Lux* Translucent Panels.

Call in your Acousti-Celotex Distributor at the early planning stage of your next project . . . and see how his new products, plus his service and experience, can benefit you.

FOR INFORMATION and specification data on Celotex Acoustical Products and translucent panels, write The Celotex Corporation, 120 S. La Salle St., Dept. B-97, Chicago 3, Illinois.

*U. S. PAT. NOS. 2,218,992 AND 2,710,335—REG. U. S. PAT. OFF.

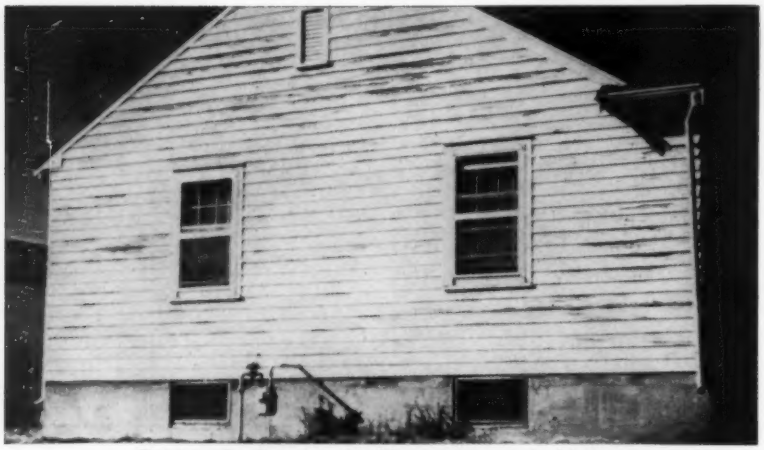
TRADE MARK

ACOUSTI-CELOTEX

REGISTERED U. S. PAT. OFF.

Sound Conditioning

Products to Meet Every Sound Conditioning Problem . . . Every Building Code—The Celotex Corporation, 120 S. La Salle St., Chicago 3, Illinois. **In Canada:** Dominion Sound Equipments, Ltd., Montreal, Quebec



Blistering and peeling paint is one of the most common types of damage caused by the collection of excessive vapor in the side walls.

Eliminate the ravages of moisture with Premoulded Membrane the only TRUE vapor seal!

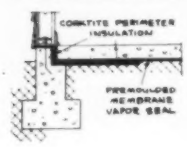
TRADEMARK

Rotting walls . . . blistering and peeling paint . . . masonry efflorescence (the white powder that forms on the outside of brick buildings) . . . warping and rotting wood floors and termite problems are just a few of the many evils we have learned to live with . . . all of them are directly or indirectly caused by excessive vapor condensation.

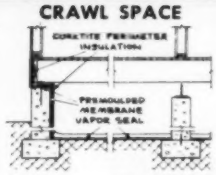
Governmental and academic research has proven that more than 80% of the moisture induced into the home is from the ground source. It makes little difference whether gravel is used under the basement, slab floor or crawl-space . . . or whether the site is on high or low ground, whether it's on a sand dune or a cess pool —somewhere below the structure, water exists and vapor will soon rise into the building. The only way to eliminate destructive moisture is in the original construction with the installation of "PREMOULDED MEMBRANE," the industries only TRUE vapor seal. In construction application the 4" x 8" sheets of "PREMOULDED MEMBRANE" are laid directly over the hard tamped grade or fill with a 6" head and side lap that is sealed with Sealtight Catalytic asphalt . . . producing a monalithic vapor seal with mechanically sealed joints, that will expand and contract with the concrete slab above . . . without breaking the bond. "PREMOULDED MEMBRANE" has a permeance rating of only .0066 grains per square foot. We sincerely invite your comparison of "PM" against all other so-called vapor barriers on the market.

IDEAL FOR ALL TYPES OF CONSTRUCTION

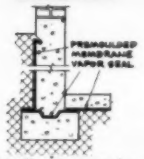
SLAB-ON-GRADE



CRAWL SPACE



BASEMENT



The above drawings graphically illustrate how the installation of "PM" completely isolates the superstructure from soil moisture.

Write today for complete information and your set of "Tech-Tips."

see our catalog in SWEET'S ARCHITECTURAL FILE or write for copy

W. R. Meadows, Inc.
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W. R. MEADOWS, INC.

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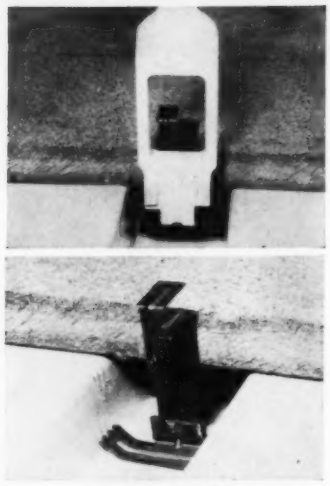
PRODUCT REPORTS



Mechanical Roof Deck Fasteners

Developed for attaching roof insulation to various types of metal channel decks, a new type of non-piercing mechanical fastener also provides a vapor barrier without the use of costly membranes. *GAT Dek-Clips* are installed with a simple tool which is placed vertically against the edge of the insulation and used to drive the clip into the flute of the deck. Sharp serrated teeth at each end of the foot element grip the sides of the deck flute after the clip has been seated, resisting up to 200 lbs pull-out. The next section of insulation is simply slipped under the projecting tab and butted against the board already in place. *Geo. A. Tinnerman Corp., Cleveland, Ohio.*

Fiber Glass Bathtub

Bathtubs molded of fiber glass are said to combine the strength of steel with a light weight which cuts both shipping costs and installation time. Other advantages include the durable easily maintained surface, and the insulating properties of the tub material itself. Available in gloss white and all standard colors, the new fiber glass tubs come with right or left hand drains in two sizes: 46½ in., 18 lbs and 54 in., 25 lbs. *Sterling Precision Corp., Fiber Glass Plastics Div., 1302 Expressway Dr., Toledo 8, Ohio.*

(More Products on page 316)

NOW — *a great new development for WALL-HUNG FIXTURES*

Josam UNITRON

CHAIR CARRIERS and CLOSET FITTINGS

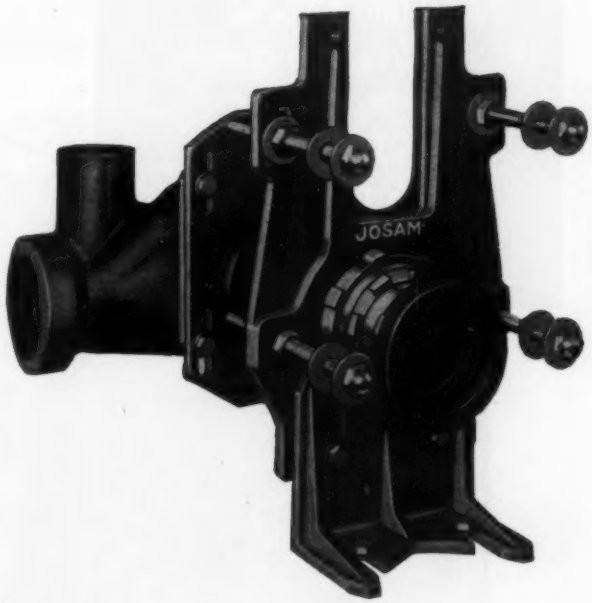
"Best by Every Comparison Test"

From JOSAM, leader and pioneer of plumbing drainage products, comes a **great new development** — Josam UNITRON Chair Carriers and Closet Fittings.

The Josam UNITRON Closet Carrier is so designed that ONE CARRIER fits all wall-hung water closet bowls and women's urinals. This eliminates using a different carrier for every blow-out or syphon jet closet bowl or women's urinal, or a different carrier for each manufacturer of such fixtures.

Architects and engineers will find UNITRON Closet Carriers enable them to meet all requirements with a minimum number of units which require one-third less pipe chase width, thereby reducing costs and providing additional rental space.

Here is today's carrier assembly for today's installation and construction requirements. Get complete data on the new Josam UNITRON line by sending coupon below.



greater ADAPTABILITY

greater ADJUSTABILITY

greater SAVINGS

REVERSIBLE CARRIER BODY — Reversing carrier body from top to bottom position permits connection for blow-out or syphon jet bowls of any manufacturer.

ADJUSTABLE EXTENSION — The Adjustable Extension on the close connection assembly, permits an adjustment of 4" between the face of the fixture carrier and the finished wall line. Adjustment can be made from the front of the unit at any time before or after the wall has been built.

COMMON VENT — A single or common vent provided for the double closet fitting is so located that it will afford more effective air circulation for the fixture and branch. With the single vent a group or row of water closets can also be loop or circuit vented.

REVERSIBLE FOOT — The Reversible Foot on the Carrier provides vertical adjustment from ¾" minimum to 4⅞" maximum. This is accomplished by reversing the foot support.

A Complete Line of Josam UNITRON Carriers and Fittings for Closets, Urinals, Lavatories, Sinks and Slabs and Hospital Fixtures

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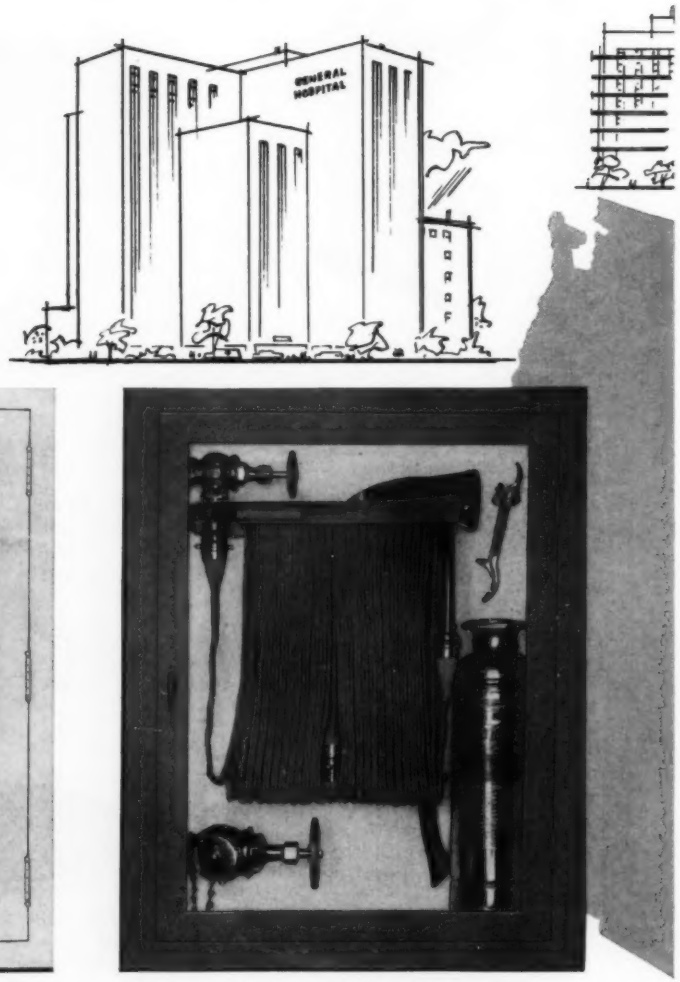
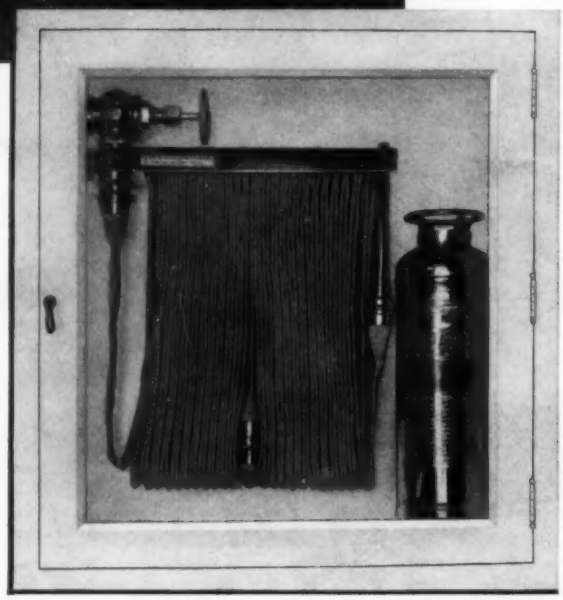
For Interior Fire Protection in Hospitals, Hotels, Apartment and Office Buildings . .

Of the various **ALLENCO** *products and models, these two types are most often used in this field—*





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Allenco Unit 192 adds handiest water-source for use by Fire Department.

Cabinets are "custom-sized" and are available in several different groups with Allenco Hollow Steel Door, Nella Sheet Steel Door, Aluminum Doors, and other styles. Rigid and true-to-size, they go in faster . . . look better . . . serve perfectly.

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contains full details in simplest form, including standard quotable specifications.
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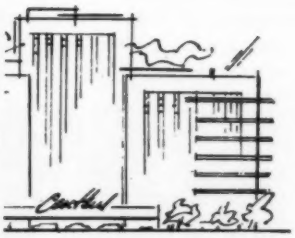

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* ALLENCO

Where	Hospital	Specifier	Installer	Fieldman
Spokane, Wash.	Rockwood Clinic	EHerbee & Co.	Standard P&H	Stan Schafer
Danville, Ky.	Ad. Bldg., Ky. State Hos.	Southern Engrg.	J. F. Humphrey Co., Inc.	Dick Disney
Bridgeport, Conn.	Bridgeport Hospital	Hill & Harrigan	Mitchell & Bailey	Harold Jope
Knoxville, Tenn.	Mercy Hall Hospital	Harry F. Wilson, Engr.	John F. Whelahan Co.	J. Scruggs
Shreveport, La.	Schumpert Hospital	Neil Somdal & Assoc.	Brown & Olds	H. Cunningham
Topeka, Kans.	V. A. Hospital	U.S. Corp. of Engrs.	Farwell Co.	H. Cunningham
Las Vegas, Nev.	S. Nev. Memorial Hos.	W. Zick, H. Sharp, Archs.	Grinnell Co.	Nic Nicodemus
El Paso, Texas	Mimbres Memorial Hos.	Schaefer, Merrell Assoc.	R. S. Palmer, Inc.	Wm. L. Massey
Bloomington, Ind.	Medical Science Bldg., Ind. U. Med. Center	Ammerman, Davis & Stout, Indpls.	Hayes Bros.	Don Davisson
Queens, N.Y.	Elmhurst Gen. Hos.	York & Sawyer, Arch. Folheimer & Sawyer, Eng.	Joseph F. Egan	Sam Burleigh
	Hotels-Apartments			
St. Louis, Mo.	Pruitt Housing Jobs (5 Projects)	J. D. Falvey, Cons. Engr.	Gartland Plbg.-Fischer Plg.-Tobin Bros. Plbg.	Ken Williams
Hartford, Conn.	Shelbourne Apts.	J. P. Negnos, Assoc. Engr.	McRory & Marren	Harold Jope
Surfside, Fla.	Florida Shores Hotel	Sherman Assoc. Arch.-Engr.	Town & Beach Plbg.	J. Scruggs
Arlington, Va.	Pentagon Plaza Apts.	Gen. Engrg. Assocs.	Harry E. Nau & Co.	George Fee
Ft. Wayne, Ind.	Van Orman N'crest Motel	A. M. Strauss, Inc.	Hipskind P&H	Ted Johnson
Beverly Hills, Calif.	Beverly Hilton Hotel	Welton Becket & Assoc.	Scott Co.	Lang Pratt
	Office Buildings			
Portland, Ore.	Pacific First Fdrl. Bldg.	Krooker & Assoc. Engr.	A. G. Rushlight & Co.	R. M. Finkles
Salt Lake City, Utah	First Security Bk. Bldg.	W. G. Knoebel, Arch. S. Winburn, Arch.	Utah Const. Co.	J. N. Nicodemus
St. Louis, Mo.	Army Personnel Records Center	J. D. Falvey, Cons. Engr.	T. J. Sheehan Co.	Ken Williams
Minneapolis, Minn.	Hardware Mutual	Richard W. Evans	Cherne-R. L. Anderson	Art Narverud
Minneapolis, Minn.	Federal Reserve Bank	Richard W. Evans	Mooneys	Art Narverud
Jackson, Miss.	United Gas Bldg.	Wm. Evans, Arch.	So. Central Htg. & Plbg.	John Briant, Jr.
New Orleans, La.	Maryland Casualty Bldg.	Curtis & Davis, Arch. deLaureal, Mosss, M. Engr.	E. M. Babet, Inc.	John Briant, Jr.
Wethersfield, Conn.	Highway Dept. Office Bldg.	Hubbard, Lawless & Blakeley	Buckingham & Routh	Harold Jope
Charlotte, N. C.	Wachovia Bank & Trust	Jaros, Baum, Bolles, Engrs.	Grinnell Co.	J. Scruggs
Dallas, Texas	Exchange Park Bldg.	Lane & Gambell, Arch. Blum, Guerrero, M. Engrs.	Sam P. Wallace Co.	H. Cunningham
Novi, Mich.	Ford Motor Co. Bldg.	Smith, Hinchman, Grylls	Viking Sprinkler Co.	Russ Collins
El Paso, Texas	El Paso City-County Bldg.	Monroe, Licht, Higgins	R. E. McKee	Wm. L. Massey
Tulsa, Okla.	S.W. Bell Tel. Bldg.	Carnahan & Thompson	Carl Moore Co.	F. Merryman
Indianapolis, Ind.	Ind. Nat'l Bank Bldg.	Bovington, Taggart, Fowler	Freyn Bros.	Don Davisson
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New York City	Socony Mobile Bldg.	Harrison, Abramowitz, Ar. Jaros Baum & Bolles, Engrs.	Eugene Dubiewer, Inc.	Sam Burleigh
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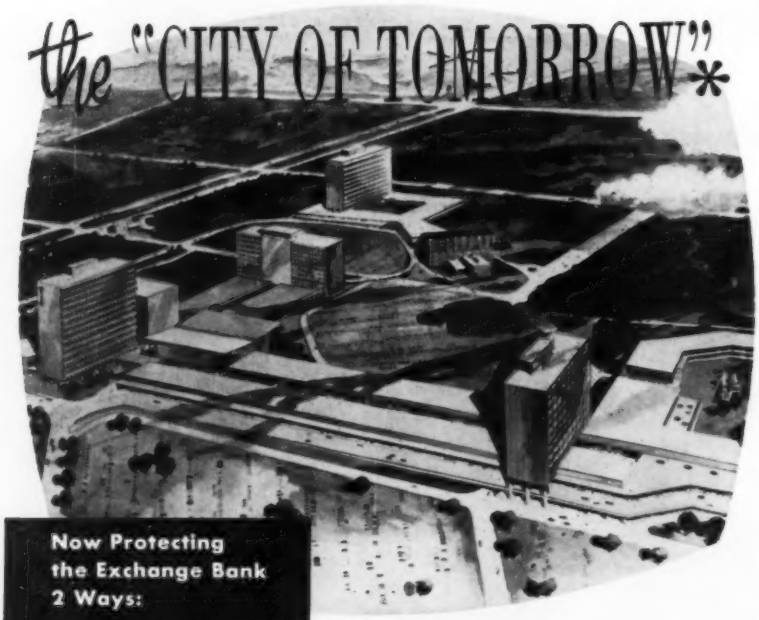
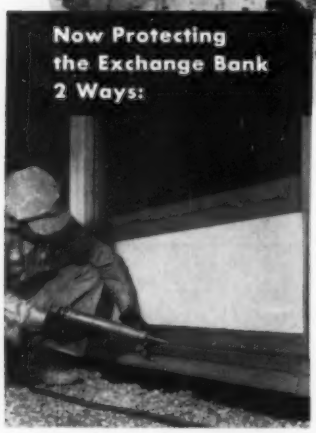
the "CITY OF TOMORROW"*



Now Protecting the Exchange Bank 2 Ways:



Sealing Around Mullion and Sill Joint in an aluminum-porcelain window wall.

Sealing Horizontal and Vertical Expansion Joints between cast stone and panels.

. . . and soon to protect the Braniff Building

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Architects, Engineers and Site Planners: Lane, Gamble & Associates

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This development, right in the heart of Dallas, will cover 120 acres, provide a total of 2,394,065 sq. ft. of usable floor space, and have a normal occupancy of about 25,000 persons.

In addition to four office buildings, the community will include a 1000-guest room hotel, medical research center, maintenance building, major department store and 100 retail shops.

*The polysulfide used in this composition is sold under the registered trademark "THIOKOL", manufactured by the Thiokol Chemical Corporation.

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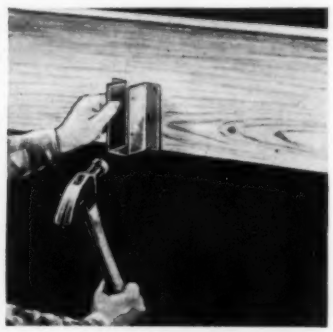
PRODUCT REPORTS

Neutral Gray Polished Plate Glass

Parallel-O-Grey, a new neutral gray polished plate glass, has been developed for curtain wall buildings and window walls for homes. Available in ¼ inch thickness with standard size maximum of 75 by 120 inches and special maximum of 90 by 120 inches, the new twin-ground, tank plate glass transmits approximately 40 per cent of illuminant "C", which is basic daylight standard; only 39 per cent of ultraviolet energy; and gives an overall reduction of 55 per cent in radiant or heat energy from the sun, according to the manufacturer. Heat absorbing and glare reducing, the glass is expected to meet wide demand for air-conditioned buildings. *Libbey-Owens-Ford Glass Co., 608 Madison Ave., Toledo 3, Ohio.*



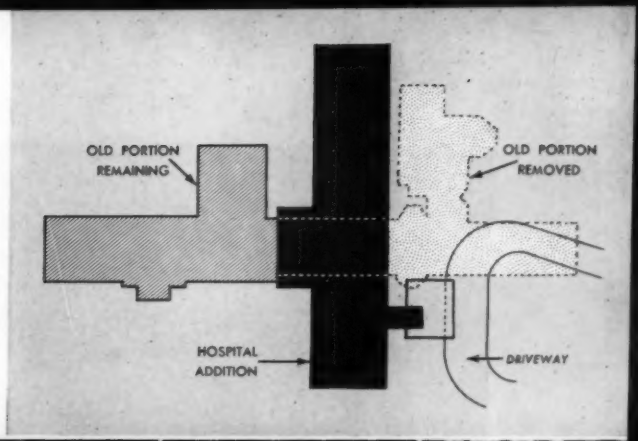
Metal Joist Hanger

The *Teco-Cal* joist hanger is said to cut installation time by as much as fifty per cent, while eliminating shrinkage problems and providing a stronger joist connection. Formed from heavy-gage galvanized sheet metal, it comes complete with special 1½ in. nails for mounting. Only two sizes are required to handle all 2 in. dressed lumber from 2 by 6 to 2 by 14, and flush joints can be easily made without mortising. *Timber Engineering Co. of California, 1485 Bayshore Blvd., San Francisco, Calif.*

(More Products on page 318)

HOSPITAL ADDITION

POTTSTOWN, PENNSYLVANIA



AWARD WINNER—1951 and 1957 Award of Merit, N. J. Society of Architects
1955 Bronze Medal, Philadelphia Chapter, AIA

"Here was an assignment that presented unusual problems at both the design and construction stages. Initially we had to design a new hospital wing to replace an obsolete building, and to connect with an existing wing to be retained. Then work had to be planned to cause the least possible noise, dirt and disturbance to normal hospital activity.

Our solution called for a steel-framed building intersecting the older units at right angles. The use of structural steel was an important factor in speeding the job and keeping dirt to a minimum. And work proceeded quietly, since we substituted bolting for riveting. Thus we met all the requirements, and produced a structure that has proven highly successful both functionally and aesthetically."

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General Contractor:
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Vincent G. Kling, Architect AIA, Philadelphia, Pa.

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for The New House of Seagram

Superbly contemporary in design

43-40

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Electrical Engineers:
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Lighting Consultant:
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Electrical Contractors:
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Selected to light the stairways of the new House of Seagram in New York, the McPhilben 43-40 wall bracket offers these exclusive advantages: solid cast aluminum construction... gleaming satin finish... dust-free and bug-tight operation... a larger, threaded tapered globe which gives greater diffusion, lower operating temperatures and longer lamp life.

Wall and ceiling units are made in 100 and 200 watt sizes. Both are available in a UL approved vapor-tight series and may be fitted with cast aluminum protective guards.

See the McPhilben sales representative in your area or write for full 43-40 specifications to: McPhilben Lighting Co., 1331 Willoughby Ave., Brooklyn 37, N. Y.

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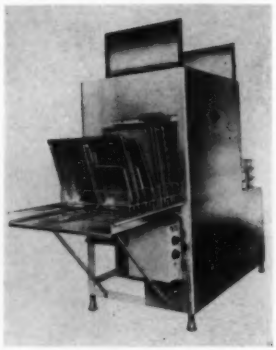


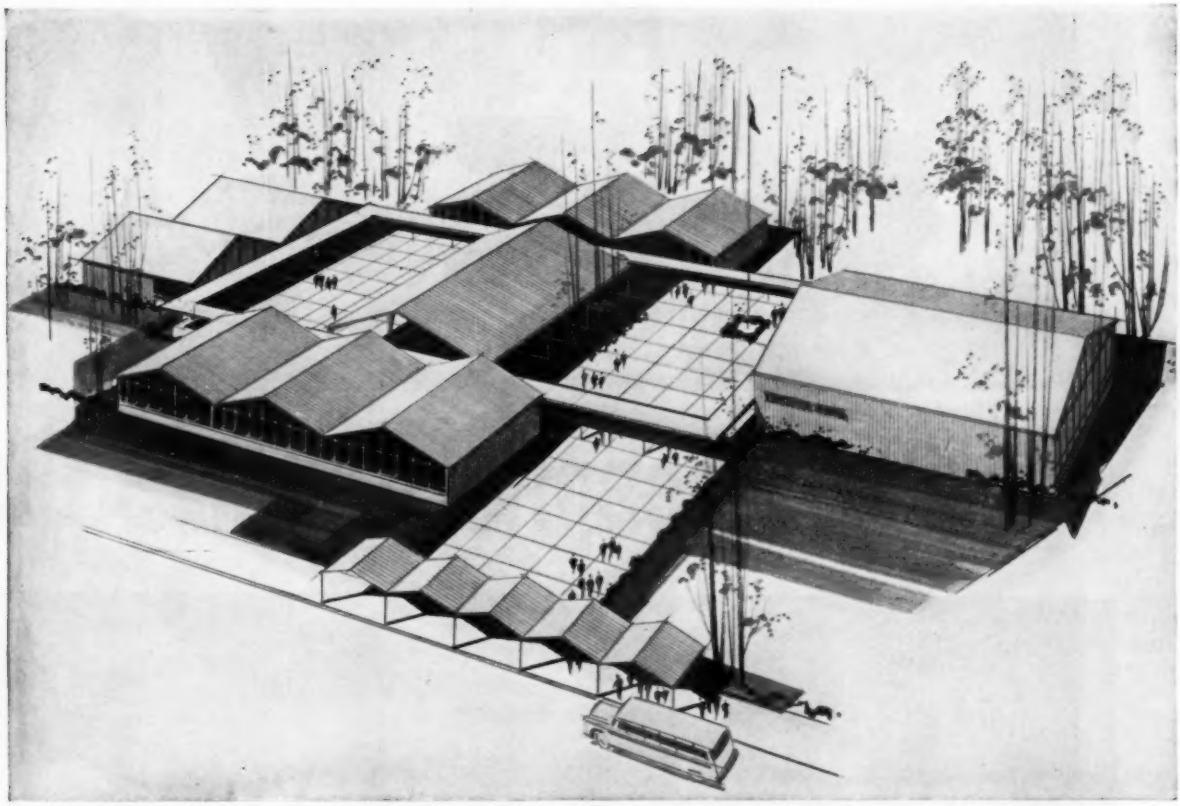
Pot and Utensil Washer

The A-F Model SD *Panhandler*, a new type two-door, "pass-through" pan, pot and utensil washer, reduces manual handling of wash loads and eliminates overcrowding in the wash area. Equipped with counter-weighted, simultaneously operating, vertical sliding doors, the unit has oversize openings measuring 27½ inches high by 24 inches wide by 37½ inches long which permit washing large objects such as garbage pails. The automatic wash-rinse cycle is controlled by a timer which is adjustable for from ½ to 5 minutes. Of all-welded 12 gage stainless steel construction, the *Panhandler* has high efficiency oscillating flat spray nozzles for maximum cleaning at high temperature and nylon rollers which facilitate movement and positioning of the load. *Alvey-Ferguson Co., 16, 106 Disney St., Cincinnati, Ohio.*

Kingsized Ceramic Tile

Magna-Tile, a new 12 by 16 inch ceramic facing, not only opens new design possibilities but also results in installation economies — one rectangle covers the same area as eleven pieces of standard 4¼ in. square tiles. Completely frostproof, it can be used for freezing lockers, as well as on exteriors in many areas formerly limited to other materials. Fifteen plain and "antique" colors are available. *Stylon Corp., Milford, Mass.*

(More Products on page 322)



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Design your next school with durable STRAN-STEEL products

Stran-Steel buildings and architectural products are engineered for the best possible combination of esthetic and functional qualities. A Stran-Steel building is a clean, attractive basic structure, which lends itself to both modern and traditional school architectural styling. One big reason for such versatility is the *Stran-Satin* metal wall which blends beautifully with collateral materials such as wood, glass or stone.

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So when you're faced with a request for a school building that must be economical as well as attractive, investigate Stran-Steel. For more information, write today for detailed literature. Or call the local Stran-Steel dealer listed in your classified telephone directory.

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NOW...hospital fixtures that

A scrub-up sink that's easy to keep sterile. *Made of Cran, exclusive Duraclay. Medicines, acids, corrosive solutions or even excessive rubbing with abrasions won't mar the gleaming surface. Designed so surgeon can scrub to shoulder without touching unsterile parts. Photograph above shows installation in Chatham County Memorial Hospital, Savannah, Georgia.* ***Architect:*** *Abreu & Robeson, Atlanta, Georgia.* ***General Contractor:*** *The Jordon Company, Columbus, Georgia.* ***Plumbing Contractor:*** *Seckinger Sons Company, Inc., Atlanta, Georgia.*

NE The Preferred Plumbing

hospital people helped design!

How would you go about designing specialized hospital plumbing fixtures? Well, Crane went right to the source—to doctors, medical technicians, hospital management people and hospital architects.

Part of the result you see here—hospital fixtures designed specifically for hospitals and for hospitals only—*not just adaptations of residential fixtures.*

The larger fixtures are made of the exclusive Crane Duraclay—a vitreous glazed earthenware that has been adopted by thousands of hospitals during the past 15 years. Duraclay will not crack or craze, even under extreme thermal shock. It will not corrode or change color; resists abrasion, acid and stains. And, Crane offers a most complete line of fixtures for ALL hospital plumbing requirements.

Why not talk to your hospital clients about Crane? You'll find that they agree with your preference for Crane hospital fixtures.

Hygiene Pier Pattern Bath for Patients' Wards. *Deeper than ordinary bathtubs. Accessible from three sides—or four in case of free-standing fixture. Makes it easy for nurse to wash patient. Made of famous Duraclay. Available with thermostatic mixer, mercury thermometer, shampoo fitting. Base not included.*

Cornell Service Sink for everyday use. *A general utility disposal sink commonly used on the operating floor, nursing and obstetrical departments. Flushing action is similar to that of a water closet. Base is not included.*

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VALVES • FITTINGS • PIPE • PLUMBING • KITCHENS • HEATING • AIR CONDITIONING

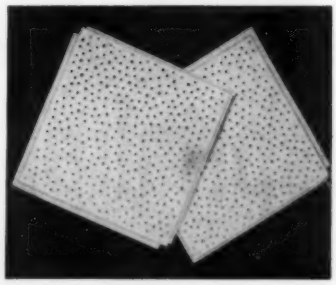
High Velocity Air Valve

Made for capacities of 140 to 1200 cfm, in above-ceiling and under-window models, the new *Kno-Draft* Series "45" valve attenuators permit simple direct connection to any type of duct layout. Helical neoprene dampers assure quietness and reduce leakage. Air pressure and velocity are throttled through a soft-walled venturi section. A frictionless aircraft cable drive over nylon pulleys eliminates control lag and insures accurate temperature response, says the manufacturer. One thermostat-controlled motor proportions both hot and cold air flow; a second motor, actuated by a pressure regulator, maintains constant volume regardless of air pressure fluctuations at the inlets. High frequency sound waves are blocked by a sinuous baffle and a deep lining absorbs low frequencies. *Connor Engineering Corp., Danbury, Conn.*

Color Finish for Asphalt

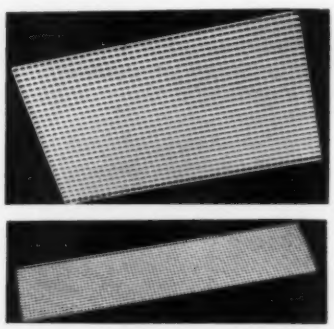
New *Insul-Mastic* Color Coat No. 261 will stick to and cover old or new black bituminous coatings, concrete, brick, cinder block, porous roofing tile, asbestos shingles, stucco and properly primed wood and metal with a tough pigmented plastic film that flexes with expansion and contraction of base material. Requiring only 30 minutes drying time, application is by spray, brush or roller. Especially suitable for color keying service lines, Color Coat No. 261 is available in rose, light green, light blue, light yellow, light buff, light gray, dark gray, and white, and in a wide variety of do-it-yourself colors. *Insul-Mastic Corporation of America, Dept B-4, 7750 West 61st Place, Summit, Illinois.*

Prevent
Leaks
...in curtain walls
New glazing and sealing techniques and products developed by Tremco research can insure leak-free curtain wall installations.
You'll find important information and specifications in a brand-new publication "SEALING GLASS AND PANELS IN CURTAIN WALL CONSTRUCTION."
Ask your Tremco Man for a copy, or write: The Tremco Manufacturing Company, 8701 Kinsman Road, Cleveland 4, Ohio, or The Tremco Manufacturing Company, (Canada) Limited, Leaside, Toronto, Ontario.
"When You Specify a Tremco Product —You Specify a Tremco Service!"
TREMCO
PRODUCTS AND METHODS FOR BUILDING MAINTENANCE & CONSTRUCTION



Acoustical Tileboard

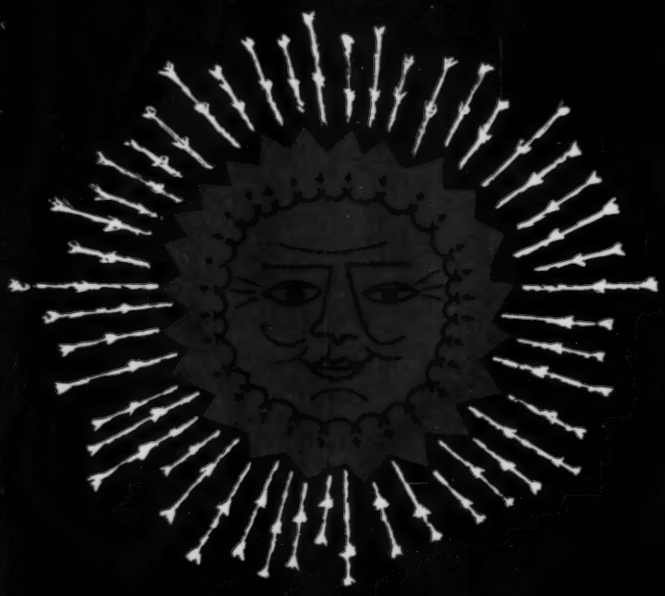
Casual Random Acoustilile, a new acoustical tileboard with an attractive, informal pattern of cleanly drilled holes, has a pre-finished, flame-resistant surface and painted bevels. It is available with butt edges in ½ in. and ¾ in. thicknesses, 12 in. by 12 in. size; and also with tongue-and-groove joint in ½ in. thickness and sizes of 12 in. by 12 in. and 12 in. by 24 in., center grooved. The butt edge tile is easily applied with either adhesive or nails, the tongue-and-groove tile with staples or nails. *Insulite, 500 Investors Bldg., Minneapolis 2, Minn.*



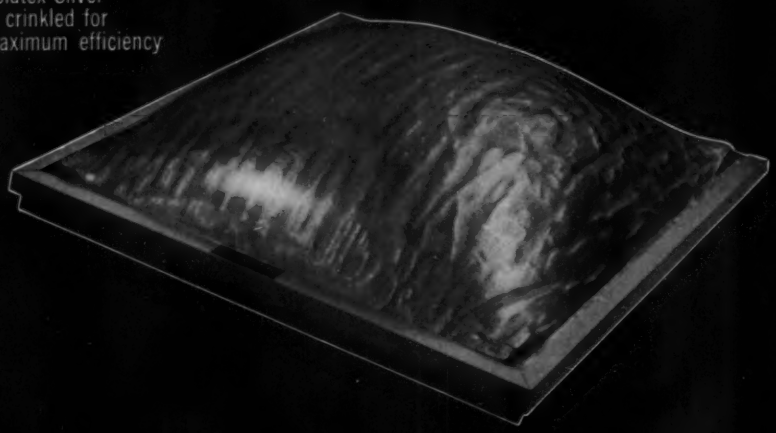
Plastic Lighting Louvers

Plastic louvers molded of high impact translucent, color stable polystyrene are now available in two sizes for all types of lighting applications. Both the 16 by 24 inch size and the one piece 10¾ by 47¾ inch size are made up of ½ by ½ by ½ inch cells to provide a shielding of 45 by 45 degrees. *Sinko Mfg. & Tool Co., 75 East Wacker Dr., Chicago 1, Illinois.*

NEW WASCOLITE REFLECTADOME* WITH SOLATEX SILVER



NOTE how Solatex Silver is crinkled for maximum efficiency



WASCO PRODUCTS, INC.

Bay State Road, Cambridge 38, Massachusetts
Wasco Chemical (Canada) Ltd., Toronto 12, Canada

the skydome that does all 3 reduces heat . . . eliminates glare . . . controls daylight

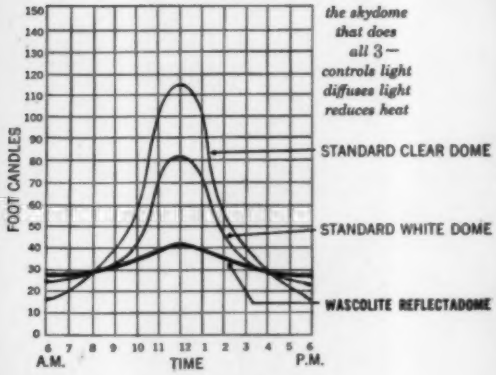
After years of development and research Wasco Products, the company that originated Skydomes, now offers you a revolutionary new overhead daylighting unit. It's Reflectadome, the one dome that reduces objectionable solar heat gain, eliminates glare and controls daylight — without supplementary light control fixtures.

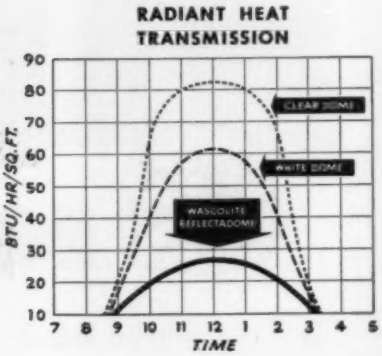
Reflectadome's secret is Solatex Silver, a special material embedded (not laminated) right into the acrylic dome. Reflectadome produces a remarkably level lighting curve to keep interiors evenly illuminated throughout the daylight hours for top visual performance.

Naturally, Wascolite Reflectadome features all the improved functional advantages of the Wascolite Skydome. Solatex Silver embedments are available only from Wasco, so specify Wascolite Reflectadome by name.

Write immediately for full details on exciting new Reflectadome, the one Skydome that does all 3! — reduces heat . . . eliminates glare . . . controls daylight.

*Trademark of Wasco Products, Inc.





REYNOLDS

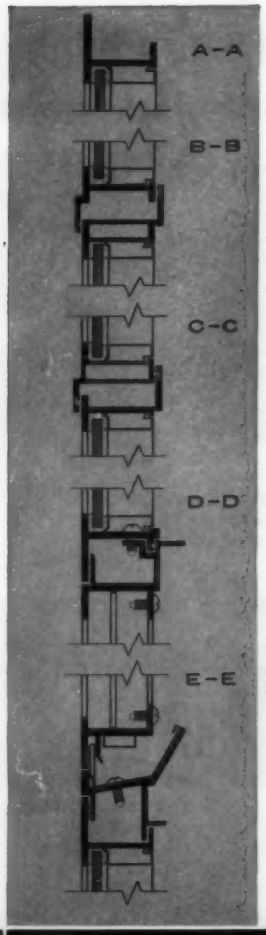
ALUMINUM

IN

MODERN

ARCHITECTURE

REYNOLDS



Tubular sash members show clearly in section drawing of wall.

575 Lexington Avenue, New York

34 stories in two-tone gold... the world's first gold anodized aluminum skyscraper.

Owners and Builders:

Sam Minskoff & Sons, Inc., New York

Architects:

Sylvan and Robert Bien, New York

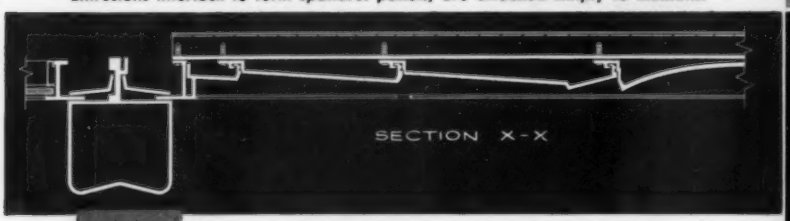
Erector of Exterior Wall:

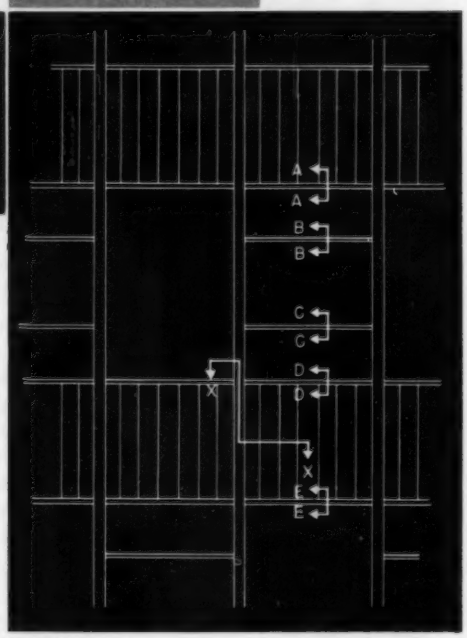
F. H. Sparks Co., Inc., New York

Reynolds Aluminum Applications:

Extruded aluminum mullions anodized bright gold; pre-assembled matte gold spandrel panels made of interlocking extrusions; intermediate projected and fixed-light windows also anodized in a matte gold.

Extrusions interlock to form spandrel panels, are attached simply to mullions.





ARCHITECTS' SERVICE

Reynolds Architects' Service Representatives offer specialized assistance on aluminum design problems, on applications of standard aluminum mill products, and on the use of commercially fabricated aluminum building products. They can help coordinate aluminum requirements for procurement efficiency and economy. Address Architects' Service, Reynolds Metals Company, Louisville 1, Kentucky.

See "Circus Boy", Sundays, NBC-TV Network. Watch for Reynolds on "Disneyland", ABC-TV Network.

ALUMINUM

Do You Specify Bradleys Only for Factories, Schools and Institutions?

FACTORIES—In mill, mine and factory, Bradley Washfountains have for many years provided sanitary, economical group washing facilities.

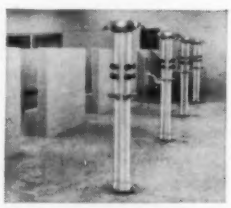
SCHOOLS—Students of all ages all over the country form the cleanliness habit when Bradleys are installed.

RECREATION CENTERS find Bradley Washfountains ideal. St. Clair Beach House, Detroit.

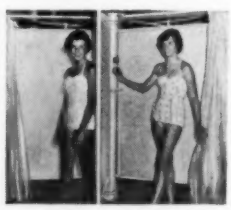
MUNICIPAL and PUBLIC BUILDINGS have Bradleys like the Cincinnati police station installation above.

INSTITUTIONS—Many hospitals are equipped with Bradley wash-up facilities. 57 in this California State Institution.

OFFICE WASHROOMS use Bradley Duos with the same Bradley sanitary feature—foot-controlled and self-flushing bowls.



BRADLEY SHOWERS—As Columns only, without or with partitions and curtains, one Bradley Shower unit can provide for 5 persons, yet with only the same piping connections as for a conventional one-stall shower.



True, Bradley Washfountains and Group Showers are very widely used in the above fields—but you will find them greatly appreciated in restaurants, theaters, stores, warehouses, transportation terminals, garages, military posts, municipal and commercial buildings, freight yards, mines, gymnasiums, stadiums, park and recreation centers, etc., etc.

Wherever the most sanitary and economical wash-up facilities are required, there is a Bradley Washfountain and/or Shower to fit the need.

For specifications, all models, see Catalog 5601—copy mailed on request . . . BRADLEY WASHFOUNTAIN CO., 2227 W. Michigan St., Milwaukee 1, Wisconsin.

Write for Catalog 5601.

BRADLEY washfountains and showers

Distributed Through Plumbing Wholesalers

LITERATURE

Catalogs • Brochures • Booklets

Fluorescent Lamp Ballasts

Sixteen page catalog and selection guide includes data on ballast lead lengths, cross section dimensions, wiring diagrams and electrical specifications for General Electric ballasts, with list prices and suggested replacements for obsolete ballasts. GEC-983K. *General Electric Co., Schenectady 5, N. Y.**

Time Saving Tips

. . . *For the Draftsman and Engineer* shows 59 shortcuts to speed drafting and computation work. 34 pp. *Reader Service Div., Frederick Post Co., 3650 N. Avondale Ave., Chicago 18, Ill.*

Speaker Baffles

Brochure P-100 gives specifications and selection data on baffles and other sound system accessories. *J. J. Powers Co., 1317 South 5th Ave., Maywood, Ill.*

Expansion Anchors and Pin Bolt Drives

(A.I.A. 4-H) Bulletin 57 presents *Bulldog* line of self drilling expansion anchors and pin bolt drives, with supplementary information on flush anchor holders, wire ceiling plates, hammer chucks and toggle bolts. *J. D. Polis Mfg. Co., Dept. A-4, 2900 W. 26th St., Chicago 23, Ill.*

Systems Engineering

. . . *Applied to Combustion Control*, the first of a series of ten educational booklets on the subject, introduces the systems concept of combustion control. A discussion of sequence draft control systems with stoker fired boilers is supplemented by diagrams and pictures. Booklet No. 1, 16 pp. *Cleveland Fuel Equipment Co., 1111 Brookpark Rd., Cleveland 9, Ohio.*

Plywood Finishing Manual

Gives complete information on various methods of finishing plywoods, with illustrations showing finished appearance of the wood. Suggestions for residential uses of plywood are included. 36 pp. *Simpson Logging Co., Rm. 1001, 2301 N. Columbia Blvd., Portland 17, Oregon.**

Locks, Latches, Builders Hardware

Catalog shows complete line of locks, latches and builders hardware, with specifications, dimensions, finishes and styling for each item. *Welch Bros. Lock Co., P. O. Box 77, North Chicago, Ill.*

(More Literature on page 330)

Why specify light level... and take a chance on sound level?

The effect of a well-lighted room is often ruined by a noisy fluorescent ballast

It's easy to meet the sound level as well as the light level requirements for every room when you specify General Electric sound-rated ballasts for your fluorescent lighting installations. Every G-E ballast is sound-rated under G.E.'s exclusive system to meet the need of every application . . . from a quiet broadcast studio to noisy factories.

And, with General Electric's new copyrighted sound rating calculator, shown on the right, you can determine **beforehand** whether or not you will encounter a ballast noise problem. Here's how it works:

All you have to do is set the sound rating, number of ballasts to be used, the proper room constant and ambient sound level of the room on the calculator wheels and read the reaction. It's as easy as that to give yourself installations that are custom fitted to every sound requirement. When properly applied, this system will eliminate costly noise complaints.

Next time you specify a fluorescent lighting installation make certain you don't "ruin the quiet" . . . specify G-E sound-rated ballasts. For more information about how you can put "sound rating" to work for you, contact your local G-E Apparatus Sales Office and send for your copy of the G-E Ballast Sound Rating Calculator today!

Progress Is Our Most Important Product

GENERAL ELECTRIC

Act NOW— Send TODAY!

General Electric Company
Section C 401-57
Schenectady 5, N. Y.

Gentlemen:

Please send me..... copies of Ballast Sound Rating Calculator, GEN-147, at one dollar each. Enclosed is my check for .....

Name.....

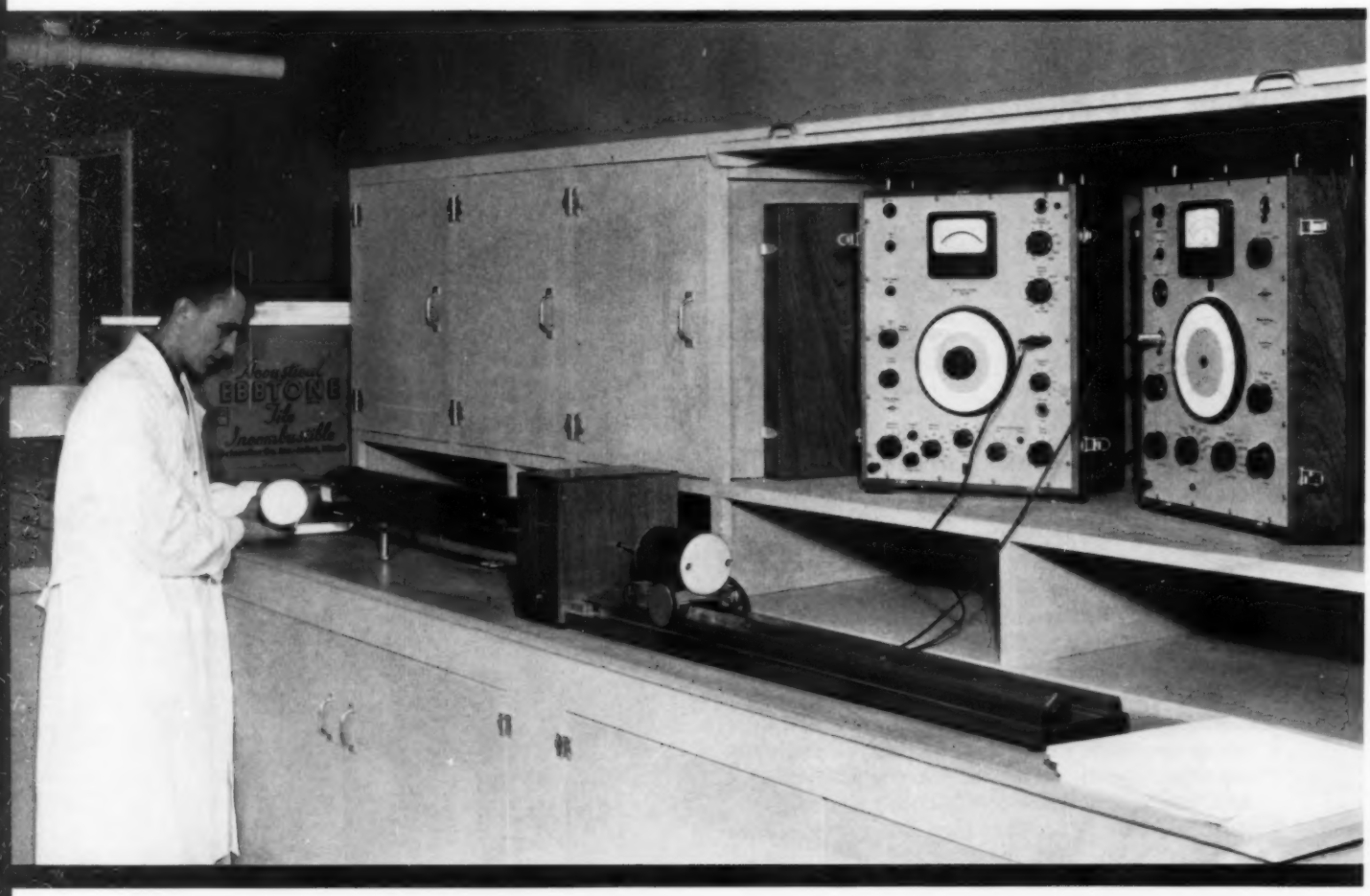
Title.....

Company.....

Street.....

City..... **State**.....

All right, how quiet is



NRC DATA ON SCHUNDLER ACOUSTICAL AND INSULATING PRODUCTS

NRC DATA — CORALUX ACOUSTICAL PLASTER

Frequency	128	256	512	1024	2048	4096
Coefficients*	.33	.19	.41	.78	.74	.87

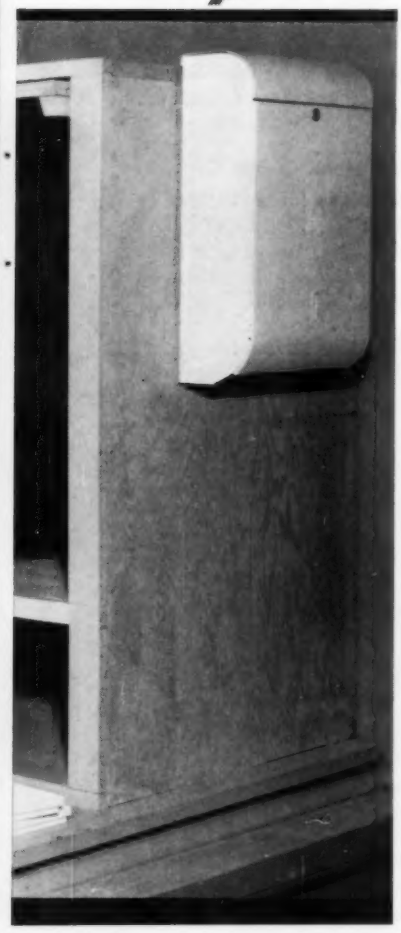
Noise Coefficient .55. *As determined by a nationally known laboratory.

NRC DATA — EBBTONE ACOUSTICAL TILE

Test Number	Unit Size Tested	Wgt. Lbs. Per Sq. Ft.	Surface	Thick-ness	Mount-ing	Coefficients						Noise Reduction Coef**
						125	250	500	1000	2000	4000	
A56-251	12" x 12"	1.2	Striated White	¾"	7	.62	.69	.64	.72	.83	.86	.70
A56-252	12" x 12"	1.2	Grained White	¾"	1	.19	.28	.67	.86	.76	.73	.65
A55-296	12" x 12"	1.22	Textured White	¾"	7	.57	.58	.60	.70	.86	.86	.70
A56-17	12" x 12"	1.28	Textured White	¾"	1	.10	.34	.68	.87	.79	.83	.65

**This noise reduction coefficient is the average of the coefficients at frequencies from 250 to 2000 cycles inclusive, given to the nearest 5%. This average coefficient is recommended for use in comparing materials to be applied in offices, hospitals, banks, corridors, etc.

a mouse?



Bit by bit acoustical fancy gives way to acoustical fact. We know, for example, that it takes more than a ceiling to put a ceiling on noise. We know that room shapes can pull the rug from under the thick carpet theory. And we know that you can have *too much* sound control. In a quiet-as-a-mouse (or a sone) executive office where you can hear a pin drop you can also hear a head fall.

Today sound control is referred to less often as a "treatment" and thought of more as an integral part of building design. Today NRC is important data for *every* building material. That is why we have equipped our laboratory with sensitive and accurate sound measuring equipment. It gives you continuing, precisely detailed NRC data on Ebbtone Acoustical Tile, Coralux Acoustical plaster, and acoustical data on Fesco incombustible insulation board.

Schundler's broad line of acoustical materials fits most of today's design needs. Ebbtone tile is ideal for plane surfaces, for extreme sound problems, and for areas requiring maximum light reflectance. Schundler's Coralux acoustical plaster is ideal for designs where unusual surfaces or effects are involved, and where economy is paramount. In addition to the above, incombustible Fesco's NRC is such that it is also used as core material for doors and partitions.

All the above Schundler products are formulated with perlite — and inherent in this natural glass is not only sound absorption, but incombustibility, permanence and feather-light weight. No other material provides to so great a degree so many properties so desirable to modern construction.

Schundler is a major producer of perlite crude ore and today's leader in the development and production of expanded perlite products.

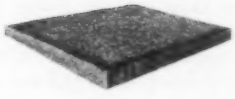
F. E. SCHUNDLER & COMPANY, INC. 504 RAILROAD STREET · JOLIET, ILLINOIS

Eastern Office: Chatham Phenix Bldg., 29-28 41st Ave., Long Island City, N.Y.

RATED FIREPROOF MATERIALS - ACOUSTICAL & INSULATING

Developers and producers of incombustible mineral products including Ebbtone Acoustical Tile, Fesco Insulation Board, Coralux Acoustical Plaster, Coralux Perlite Aggregates, Mica Pellet Vermiculite, High Temperature Insulating Blocks and Insulating Cement.

Schundler Products for Fire, Temperature and Sound Control



Fesco Board®

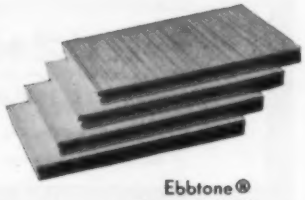
Coralux® Perlite Aggregates

Insulating Cement

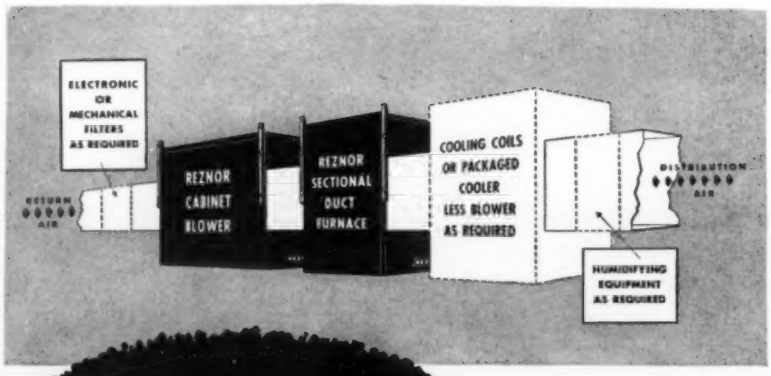
153 High Temperature Insulation Blocks

Mica Pellet Vermiculite

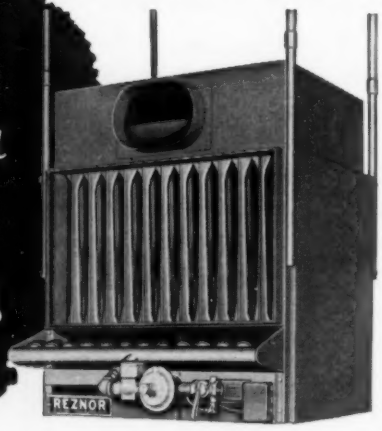
Coralux® Acoustical Plaster



Ebbtone® Acoustical Tile


ELECTRONIC OR MECHANICAL FILTERS AS REQUIRED
RETURN AIR
REZNOR CABINET BLOWER
REZNOR SECTIONAL DUCT FURNACE
COOLING COILS OR PACKAGED COOLER LESS BLOWER AS REQUIRED
DISTRIBUTION AIR
HUMIDIFYING EQUIPMENT AS REQUIRED

How to Match a Heating System to Exact Job Requirements



Reznor sectional duct furnaces free the designer from the limitations imposed by packaged heating equipment . . . equipment which can't be *exactly right* for any one job because it has to be *good enough* for so many different jobs.

A heating or heating-cooling system designed around a Reznor duct furnace can be matched to exact job requirements. Each duct furnace is a compact, highly efficient heat exchanger with a full set of operating controls. All other components,—for air moving, cooling, cleaning and moisture control—are separately specified and installer-supplied. Only those components which are necessary on the particular job need be included, with each individually selected to fit that one job.

Sectional assembly (a completely new concept in duct heating equipment) completely eliminates the installation problems which formerly prevented the use of large capacity custom-engineered duct heating systems. With the Reznor Series DS sectional duct furnace, systems with capacities in excess of 2,000,000 Btu can be assembled on the job from sections weighing no more than 315 pounds. Each of four basic sections—150, 200, 250, and 300 thousand Btu—is complete with controls and is provided with its own built-in draft diverter, flue connections and mounting pipes.

If you aren't taking advantage of the design flexibility of Reznor sectional duct furnaces, you're missing a good bet on many of your commercial, industrial and institutional jobs. Don't delay getting all the details on this versatile line of heaters. Give your nearby Reznor distributor a call—today.

REZNOR
WORLD'S LARGEST-SELLING DIRECT-FIRED UNIT HEATERS
Reznor Manufacturing Co.,
62 Union St., Mercer, Pa.

for complete details,
wherever you are . . .

Look for Reznor under "Heaters-Unit" in the Yellow Pages

OFFICE LITERATURE

Laboratory Ovens

Bulletin 6–57 describes and illustrates specialized ovens, water baths and humidity chambers for field or laboratory testing of soils, concrete, asphalt and other construction materials. *Soiltest, Inc., 4711 W. North Ave., Chicago 39, Ill.*

Standardized Motor Control Centers

Presents application and engineering data for selection and planning of *Unitrol* standardized motor control centers. Illustrated, 32 pp. *Cutler-Hammer Inc., 315 N. 12th St., Milwaukee, Wisc.*

Fluorescent Lighting System

(A.I.A. 31-F-2) Describes and gives installation data for *Uni-Race* raceway and *Ortho-88* "plug-in" fluorescent fixtures. *Gibson Mfg. Co., 1919 Piedmont Circle, N. E., Atlanta 9, Ga.*

Architectural Metal Letters

Catalog ML-3 gives specifications, installation methods and available finishes for basic alphabets and script styles of architectural metal letters. Examples of specially cast names and emblems are also shown. 20 pp. *A. J. Bayer Co., 2300 E. Slauson Ave., Los Angeles, Calif.*

Propeller Fans

Bulletin A-109C contains selection and performance data, specifications and dimensional drawings on the *Hartzell* line of fans, intake air units and unit heaters. 32 pp. *Hartzell Propeller Fan Co., Piqua, Ohio.*

Air Engineering Data File

(A.I.A. 30-D-1) Bulletin E-57 covers engineering data and specifications, as well as information on the construction, installation and maintenance of propellor fans. 24 pp. *Aerovent Fan Co., Inc., Piqua 6, Ohio.*

Inventive Designs

Well-designed brochure presents ideas of eight leading architects on the use of ceramic tile for key areas in the modern home. Designs by Pietro Belluschi, Marcel Breuer, Walter Gropius and the Architects Collaborative, Huson Jackson, George Nelson, George Nemeny, Richard Neutra and Edward Stone are illustrated in black and white and color. 20 pp. *Tile Council of America, Inc., 800 Second Ave., New York 17, N. Y.**

(More Literature on page 334)

California Redwood...

with its warm natural beauty... is the perfect material to bring a friendly atmosphere to this New Orleans hospital. When you specify "CRA-Certified Dry" redwood, you and your client are assured of uniformly high quality... and fine performance regardless of climate!

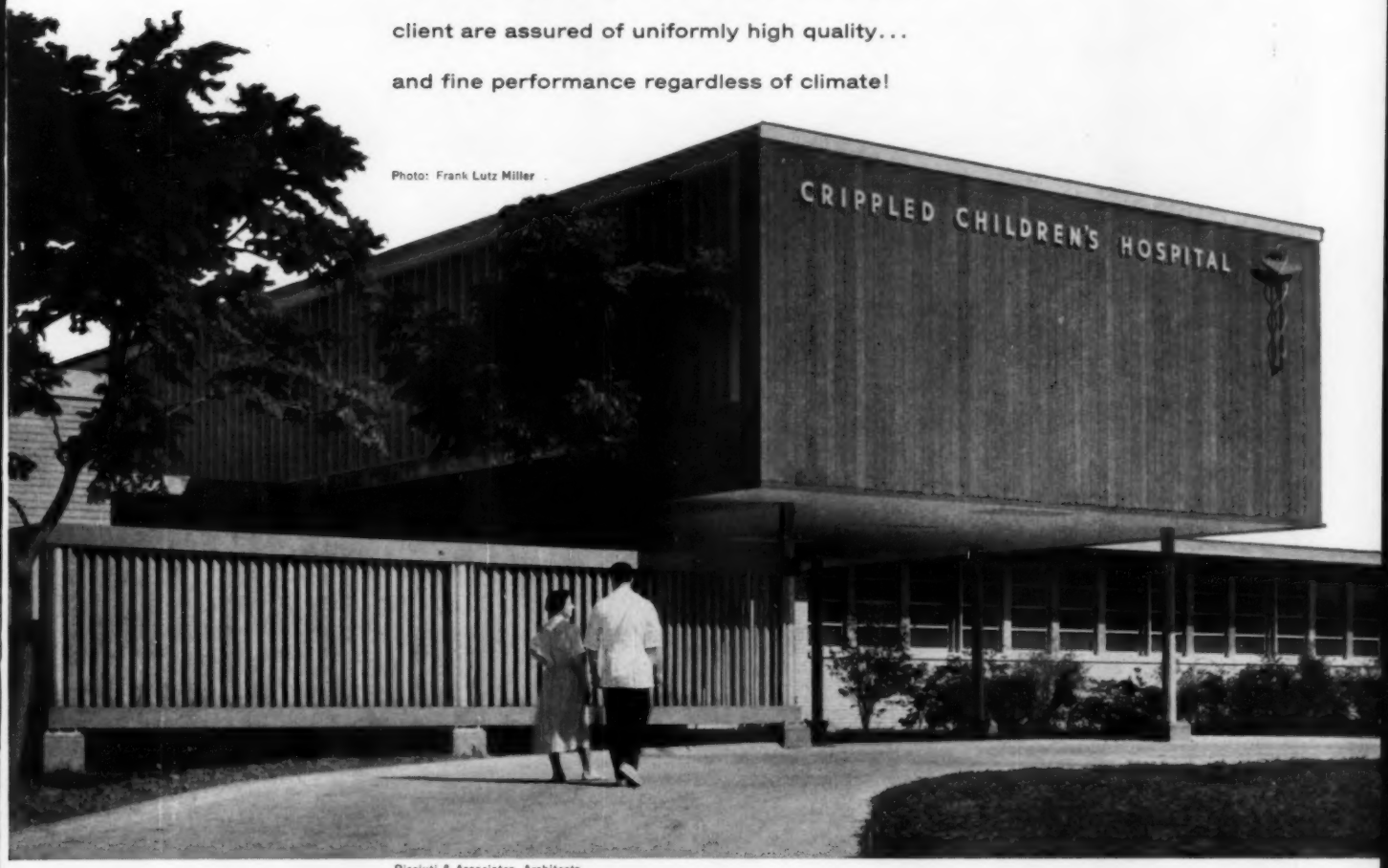


Photo: Frank Lutz Miller

Ricciuti & Associates, Architects

CRA

CRA-Certified Dry is produced by the following member mills of the California Redwood Association

Arcata Redwood Company
Hammond-California Redwood Co.
Hollow Tree Redwood Company
Holmes Eureka Lumber Company
The Pacific Lumber Company
The Pacific Coast Company
Simpson Redwood Company
Union Lumber Company
Willits Redwood Products Company

CALIFORNIA REDWOOD ASSOCIATION • 576 SACRAMENTO STREET, SAN FRANCISCO 11, CALIF.

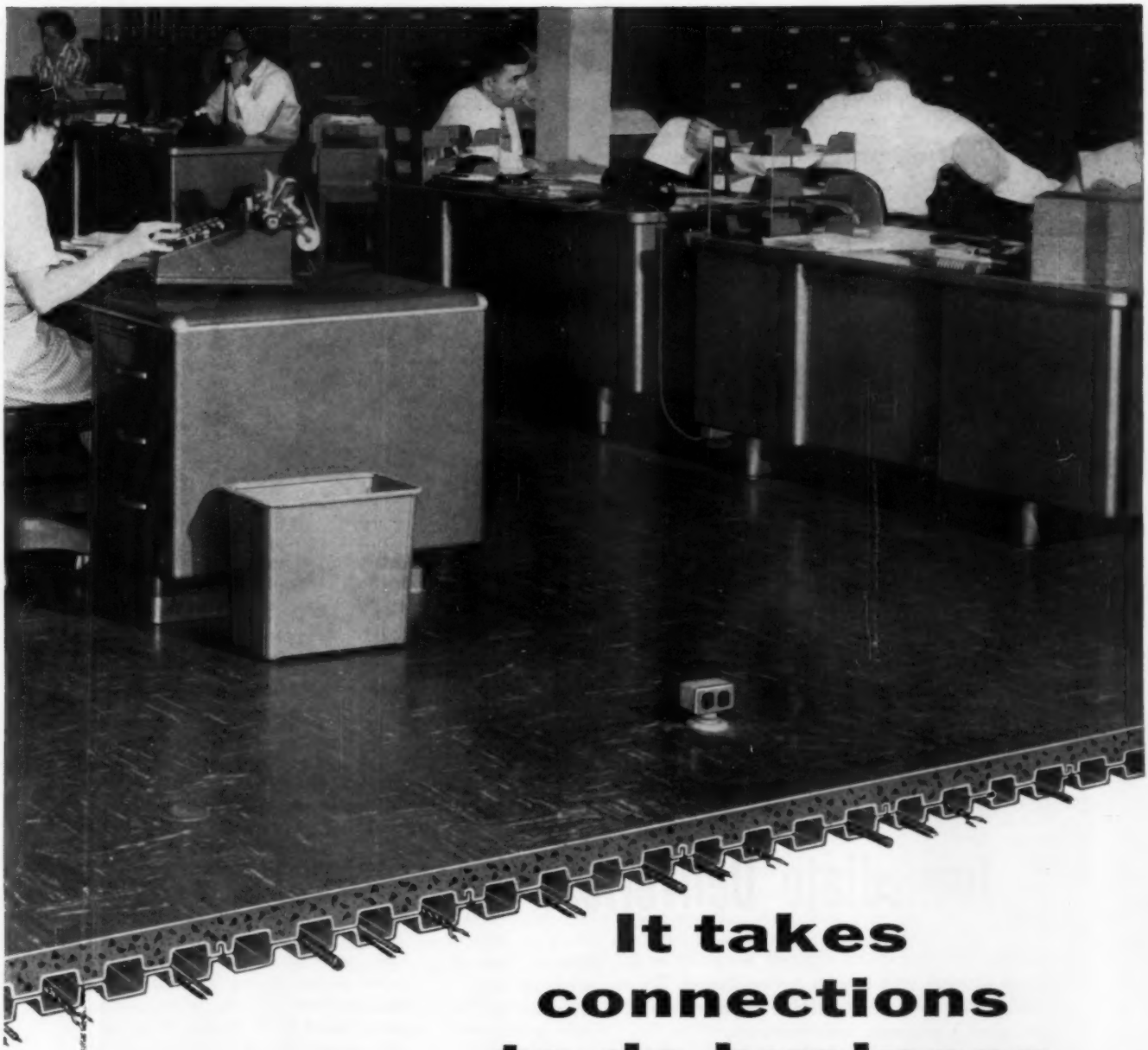
NO MORE DANGEROUS OVER-FLOOR WIRING!

Too many of today's offices are not built to accommodate extra wiring without makeshift arrangements... unsightly exposed wires at baseboards and dangerous raised wiring strips across floor areas. Don't let this happen to *your* buildings!

INLAND

INLAND STEEL PRODUCTS COMPANY
DEPT U, 4033 WEST BURNHAM STREET • MILWAUKEE 1, WISCONSIN
ATLANTA • BALTIMORE • BUFFALO • CHICAGO • CINCINNATI • CLEVELAND
DALLAS • DENVER • DETROIT • KANSAS CITY • LOS ANGELES
MILWAUKEE • MINNEAPOLIS • NEW ORLEANS • NEW YORK • ST. LOUIS. C-3

MILCOR®



It takes connections to do business...

and the best electrical connections are made through Milcor Celluflor

Today's offices use up to *three times* as much electricity as they did *only 10 years ago*—according to a metropolitan power study. This growth will multiply in the years ahead. How vitally important it is, then, that your clients be protected from electrical obsolescence!

Milcor Celluflor permits complete electrification of floor areas. Its cells, spaced six inches o.c., provide ample capacity for complex cable systems of power, communications, and other electronic circuits. Circuits can be changed and service outlets can be installed — or relocated — simply and quickly, without costly alterations.

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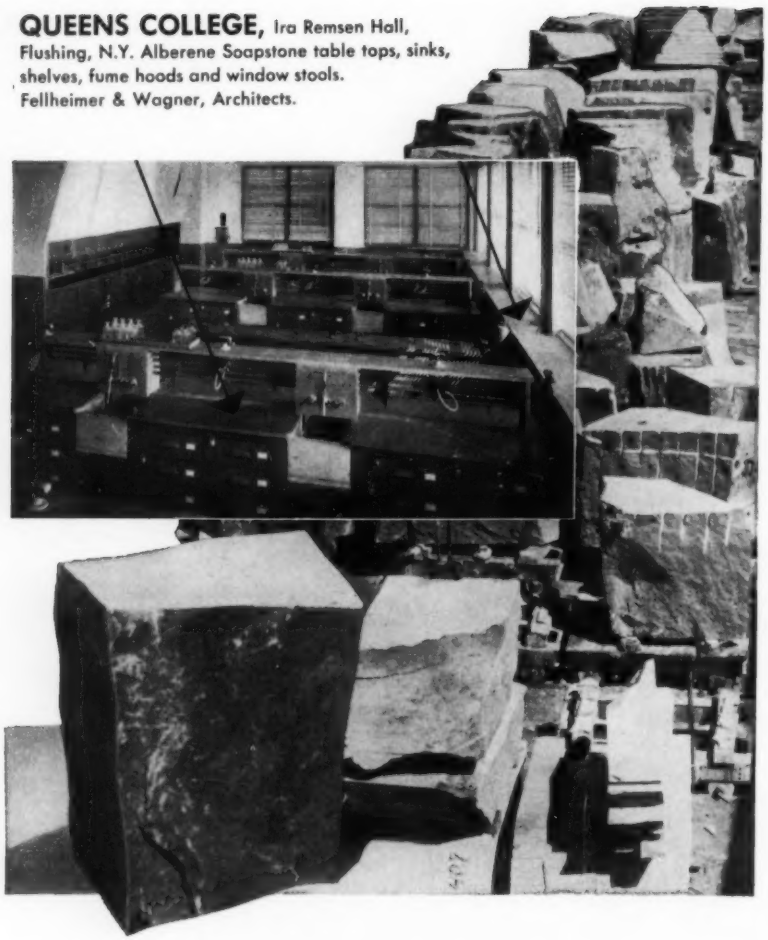
Specify Milcor Celluflor in your plans, to give clients the electrical flexibility they need. For more information, write for our catalog 270, or refer to Sweet's File, section 2a/In.

CELLUFLOR

QUEENS COLLEGE, Ira Remsen Hall, Flushing, N.Y. Alberene Soapstone table tops, sinks, shelves, fume hoods and window stools. Fellheimer & Wagner, Architects.



Immediate Deliveries!

Alberene Stone can be shipped normally in 60 days—or even sooner to meet very special circumstances. We can schedule our deliveries to meet all reasonable requirements of contractors and laboratory equipment manufacturers.

Further, the supply of Alberene Stone is inexhaustible. New veins are constantly being located in company owned quarries in Albemarle and Nelson Counties, Va.

Alberene Stone *is the only natural silicate stone with the surface that goes all the way thru.* It can be cut, drilled, tongue-and-grooved, refinished and reused almost indefinitely — *while providing the best obtainable chemical resistance!*

For information and technical assistance, address: Alberene Stone Corporation, 419 Fourth Avenue, New York 16, N. Y.

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OFFICE LITERATURE

Plexiglas in Architecture

(A.I.A. 24) Sixteen-page bulletin PL-236 describes characteristics, types and applications of *Plexiglas* acrylic plastic, and gives information and details on its use in typical installations. *Rohm & Haas Co., Washington Sq., Philadelphia 5, Pa.**

Richmond Plumbing Fixtures

Contains illustrations, specifications and rough-ins on full line of plumbing fixtures, including lavatories, bath tubs, water closets, urinals, sinks and other products. *Richmond Plumbing Fixtures Div., Rheem Mfg. Co., P. O. Box 111, Metuchen, N. J.**

Vermiculite Concrete

. . . *as a Horizontal Diaphragm* reports on a test program demonstrating the adequacy of vermiculite concrete as a horizontal diaphragm to resist earthquake loads and other lateral forces. *Vermiculite Institute, 208 S. LaSalle St., Chicago 4, Ill.*

Customized Unit Casework

Illustrated brochure gives selection data and specifications for complete line of *Moduline* casework for hospitals, laboratories, institutions and industry. 32 pp. *A. S. Aloe Co., 1831 Olive St., St. Louis 3, Mo.*

Zone Control Manual

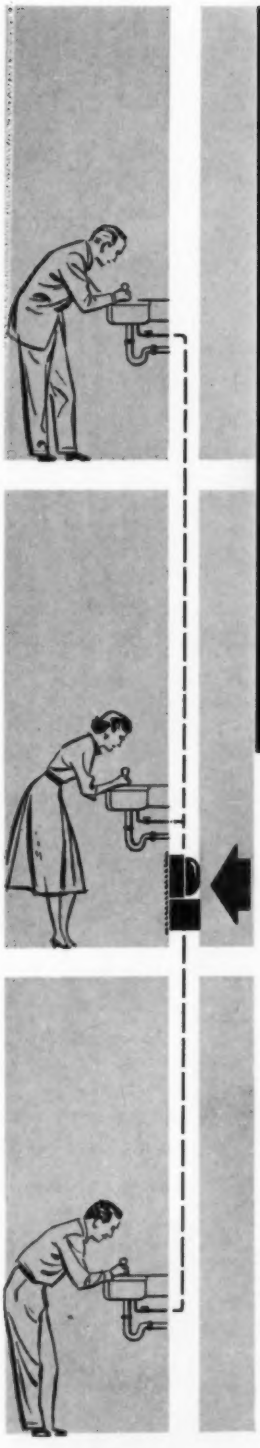
(A.I.A. 30-E) Provides comprehensive information and schematics for zone control of hot water and steam systems and installations, with a description of zone control devices for each. Guide specifications and ordering information are included. 28 pp. *Merchandising Div., Minneapolis-Honeywell, 2753 Fourth Ave. South, Minneapolis 8, Minn.**

Fir Plywood Diaphragms

Presents basic facts about diaphragm construction with fir plywood, including the functions and advantages of diaphragms, design data and details, and information on costs, acceptance and specifications. 10 pp. *Douglas Fir Plywood Association, Tacoma 2, Wash.**

Outline for a College Course

. . . *in Timber Engineering and Construction* serves as a guide for a comprehensive study of timber engineering, design and construction. *Timber Engineering Co., 1319 18th St., N. W., Washington 6, D. C.**



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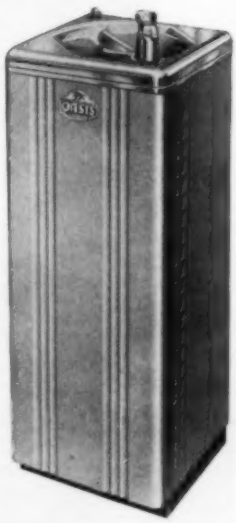
the versatile new OASIS IN-A-WALL Water Cooler

It's Oasis' latest—a super-compact water cooler. Supplies refreshingly cold water to as many as 4 new *or already installed* remote drinking fountains in restaurants, office buildings, factories, hospitals, institutions, *and homes.*

Easy To Install—structural limitations are no problem for the versatile Oasis In-A-Wall. It's *built thin to build in . . .* and it mounts just as easily on a joist, in closets, or on-a-wall.



TWO MODELS AVAILABLE—the small Oasis model, IW-5, supplies 5 GPH, sufficient for 60 persons in offices or schools, and 35 in light industry. The large model, IW-10, has a capacity of 10 GPH, adequate for 120 people in offices and schools and 70 in light industry.

An Oasis Water Cooler For Every Requirement—The complete Oasis Water Cooler line includes models with capacities from 2 to 35 GPH, hand or foot operated, pressure or bottle, stainless steel, heavy duty, explosion proof, air-sealed industrial, cafeteria, juvenile, refrigerated compartments, and the famous Oasis Hot 'n Cold which makes piping hot water, as well as cold water.

Mail coupon for specifications and roughing-in details

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The Ebco Manufacturing Company, Columbus 13, Ohio
Manufacturers of the most complete line of water coolers
DISTRIBUTED IN CANADA BY G. H. WOOD & CO., LTD.

Ebco Manufacturing Company
Dept. 2-F, Columbus 13, Ohio

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Mall Building, Philadelphia. Yale Locks and Hardware supplied by Fifer & Beatty, Philadelphia.

Its name: Mall Building

Its location: Philadelphia

Its architect: Charles Colbert

Its contractor: Shelby Construction Co.

Among its appointments: Yale Heavy-Duty Locksets and Door Closers

Yale heavy-duty locksets (5400 Series) and door closers (both surface and concealed—Series 90 and 60, respectively) have application for apartment buildings, offices, hotels, hospitals, stores, theatres, restaurants, schools, factories. Yale locksets are distinguished by elegance, precision, unquestioned security—in distinctive knob and trim designs, or, if you prefer, in custom stylings created to your requirements. Yale door closers, are, of course, still the standard of sure, quiet closing—long-lasting efficiency.

The Yale & Towne Mfg. Co.
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the **THERMADOR**
Royal **18**
STANDARD Bilt-in
ELECTRIC OVEN

Large full-size 18-inch oven with high quality features at budget price.

- Almost 6500 cubic inches of usable oven space — cook a 37 pound turkey with room to spare.
- Oven Interior: 18" wide x 18" high x 19⅞" deep.
- Full width protective hood.
- Combination Automatic Timer, Electric Clock, and Timer.
- Fully automatic pre-heat: single knob thermostat control for broiling, baking or roasting.
- Automatic oven interior light — oven signal light.
- Recessed, infra-red open-coil 3000 watt broiling element.
- Smokeless, deluxe broiler pan with aluminum tray.
- Two sturdy, deluxe oven racks.
- Removable blade-type open-coil 1800 watt baking element with specially designed Reflectube heat-deflector.
- Deluxe, stippled white oven interior, with smooth rounded corners for ease of cleaning.
- Insulated with highest quality Fiberglas.
- "Balanced Heat" for perfect baking results.
- Large, easy-grip plastic handle and knobs of "Midnight Blue" to match all Thermador cooking tops.
- Fits any 24" cabinet.
- Model TSO in Lifetime Stainless Steel.
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- Available in Stainless Steel or Decorator Colors with special heat resistant, fog- and stain-proof glass 'Easy-View' window.

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9-1137

Report from U.S.S.R.

(Continued from page 16B)

installations, houses and communal buildings — are all the job of the Institute of Rural Construction.

All the above institutes work on problems of architecture, building economics and engineering as an interrelated whole; they are also engaged in much experimental construction as well as research connected with actual building operations.

Engineering and other technical problems are the subjects of study by specialized organizations also under the jurisdiction of the Academy of Construction and Architecture.

The Institute of Structural Engineering, for example, designs and develops the elements of structures, their statics, dynamics and stability; it improves the design of steel, wood and masonry elements as well as details made of other kinds of materials. The computing of construction for districts located in seismic zones, regions of eternal frost and areas located over mining fields are also part of the work of this institute.

The Institute of Concrete and Reinforced Concrete is staffed with experienced engineers engaged in improving calculation methods for reinforced concrete design, especially the prestressed type.

The job entrusted to the Institute of Building Construction Physics is research connected with improvement of the basic elements of structures: walls, partitions, floor slabs and decks, roofs, windows, doors, etc. It also deals with means for mass production of these structural elements.

Mechanics of soils, design of foundations and subterranean structures are the subjects of research by the Institute of Foundations.

The Institute of Sanitation Engineering specializes in problems dealing with the most practical and economic design of heating and plumbing systems (water supply, sewerage, heating and gas supply) and all relevant fixtures.

The Institute of Site Organization and Mechanization decides questions of construction methods, consecutive operation lines and their practical application. Its job also includes problems dealing with winter construction, improvement of types of machines used in building operations, as well as questions concerning automation in factory production of structural elements.

The Institute of Building Finish and Fittings studies methods guaranteeing high quality of architectural finish and lowering its cost in the construction of houses and public buildings. It also deals with the more efficient use of roll

(Continued on page 342)

Owner: Nedmac Associates, Inc. *Architect:* Ziegler, Childs & Paulsen. *Structural Engineers:* Lars I. Moe & Son.
General Contractor: Terminal Construction Corporation.

3,500 Tons Erected in Five Weeks With High-Strength Bolting

This is the new Parkade Building, a modern functional structure in the center of Camden, N. J. The wings and first and second floors of the center portion of the building are used for office space, while the top three floors of the center portion, plus the entire roof, are devoted to parking facilities for 1000 cars. Bethlehem High-Strength Bolts were used in joining the structural members of the 3500-ton steel framework, which was erected in less than five weeks.

Bethlehem High-Strength Bolts make possible a saving in time in erecting steelwork because they are so easy to install. Only two pieces of equipment—a holding wrench and a pneumatic impact wrench—are needed to make joints which are permanently tight.

In addition to the time-saving factor, high-strength bolting is a particularly good choice for construction in hospital and school zones, as the pneumatic wrench used for tightening is far less noisy than a riveting gun. Besides, there's no fire hazard involved, as the bolts are installed cold. Nor is there danger of injury from tossed rivets.

Bethlehem High-Strength Bolts are made of carbon steel. They are heat-treated by quenching and tempering, and meet the requirements of ASTM Specification A-325.

If you would like a copy of our illustrated booklet on high-strength bolting, all you need do is get in touch with the nearest Bethlehem sales office. Or write to us at Bethlehem, Pa.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation

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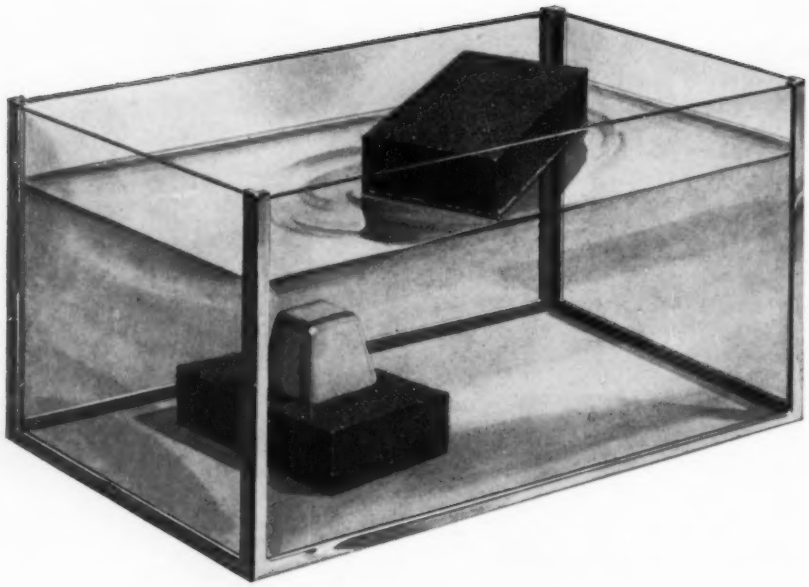


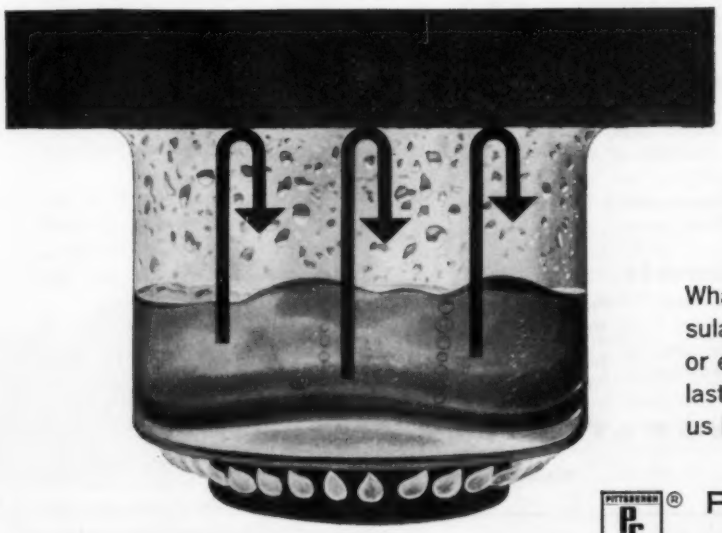
Waterproof!
—can't absorb moisture . . .
has constant insulating value

Only FOAMGLAS® insulation combines

Unusually strong!
—to carry heavy loads during
and after construction

Incombustible!
—inorganic . . . won't burn . . .
gives added building safety

these benefits in one material . . .



Vapor-proof!
—closed cell structure forms
natural vapor barrier

Whatever your building type . . . whatever your insulating problem: roofs, ceilings, walls, floors, piping or equipment—a FOAMGLAS specification means a lasting insulation investment for your clients. See us in Sweet's, or write today for detailed literature.

PITTSBURGH PC CORNING ®

Pittsburgh Corning Corporation
Dept. B-97, One Gateway Center, Pittsburgh 22, Pa.
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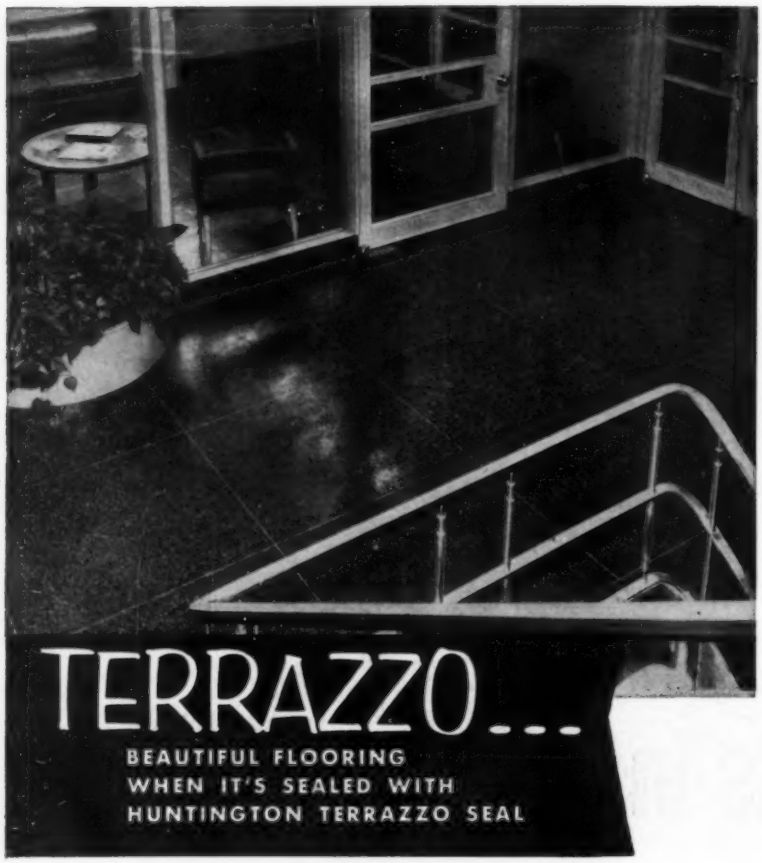

The beauty of terrazzo endures—*if* Huntington Terrazzo Seal is used to protect the floor. Even after years of hard wear, a Huntington protected terrazzo floor will maintain its original color and beauty! Huntington Terrazzo Seal provides a non-slippery, waterproof surface. It simplifies maintenance, preserves the surface against excessive cracks and chipping, and prevents damage from improper cleaning methods.

Easy to apply, Huntington Terrazzo Seal dries in twenty minutes. Floors can be used after 4 hours. Dirt, or even grease and chemicals, won't harm or stain terrazzo or marble that is protected with Huntington Terrazzo Seal.

If the floors you specify are terrazzo—keep them beautiful by specifying Huntington Terrazzo Seal.

Huntington Terrazzo Seal:

- Exceedingly durable.
- Dries in twenty minutes, ready for use in about 4 hours.
- Protects all terrazzo and marble floors.
- Provides a safe, non-slippery floor surface.
- Protects floors from stains.
- Prevents damage from improper cleaning methods.

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CITY_____ STATE_____

Report from U.S.S.R.

(Continued from page 338)

and sheet materials, varnishes, material for insulation, acoustics and roofing.

The job of another institute — the Institute of Building Economics — is to study the disposition of the building industry throughout the country and its organization in the national economy.

The Institute of History and Theory of Architecture and Construction is engaged in studying questions of Soviet and Russian architecture and the architecture of Soviet nationalities, general architectural history, and the history of building engineering in the U.S.S.R. and abroad. Included in the work of the staff are critical analyses of actual designs and building practice; they prepare for publication textbooks and scientific papers pertaining to the sphere of architectural composition and building design.

Collection of data concerning construction and architecture is the work of the Institute of Building and Architectural Information; its aim is to aid in introducing the latest methods — both Soviet and foreign — into the building industry. This institute publishes regular periodicals and other information for wide distribution.

Many other fields are embraced by the Academy of Construction and Architecture.

An experienced staff, connected with the Central Institute of Typical Housing and Municipal Projects, works out typical designs for houses and public buildings and is also busy compiling catalogues containing lists of prefabricated structural elements and precast details and standard fittings of all kinds. This institute also studies questions pertaining to building maintenance for newly erected structures.

Achievements in the sphere of construction and architecture are the subjects of regular exhibitions at the Permanent Exposition of Construction and Architecture in Moscow.

A rich exhibition of Soviet architecture and its history is on display at the Museum of Architecture.

Important restorations of architectural monuments are being carried out by the Central Restoration Studios.

At the Academy of Construction and Architecture there are a complete engineering and architectural library, a laboratory for experimental work, a publishing house for building and architectural literature, and a number of other auxiliary establishments.

I myself am in charge of the architectural institutions of the Academy of Construction and Architecture. I find my work extremely interesting and de-

(Continued on page 346)

Area-lighting system of many moods welcomes office visitors at the New England Mutual Life Insurance Company

New Sylva-Lume wall-to-wall illumination *by* Sylvania

You can custom-create ▲ lighting designs like this . . .

using a few standardized components like this ▲

Deep panels • 4 types. In pink, yellow tints, or white

Subtle dashes of color. A warm and pleasant mood. Ceiling décor that almost seems to extend a friendly, "Welcome."

In its own quiet way, new Sylvania *Sylva-Lume* brings all this mood, and good lighting too, to these Boston (Mass.) reception rooms of the New England Mutual Life Insurance Co. It helps also to separate various functional sections of the large room area.

Here New England Mutual uses only one of many possible ceiling designs. Actually, *one in over 100,000* . . . custom-created from a few standardized components . . . using a track grid system based on 36-inch modules. The existing designs can be changed overnight, if desired, by simply shifting the vinyl plastic panels and perforated metal baffles.

New *Sylva-Lume* is a lighting system of unlimited designs and moods, for the designing man of many moods. Developed by a creative group for a creative profession, it allows unlimited freedom of design. By organizing its elements of color, light and form, you can create desired pattern, texture, and style. *Write direct for folder of complete information.*

SYLVANIA ELECTRIC PRODUCTS INC.
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LIGHTING • RADIO • ELECTRONICS
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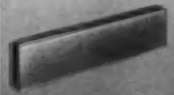
Shallow panels • 4 types. In same two tints, or white

Drumhead panels • 8 types. White, pink, yellow . . . in several pleasing combinations



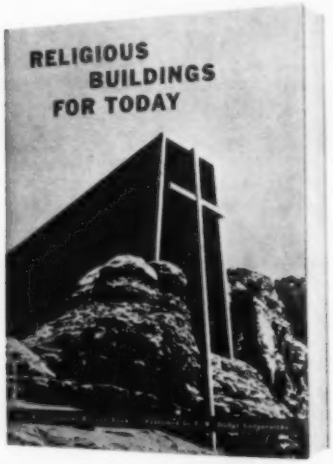
Acoustic baffles— White, yellow or blue —delineate and accent

Perimeter panels— Interesting treatment for borders

A MAGNIFICENTLY ILLUSTRATED SURVEY OF CONTEMPORARY CHURCH ART AND ARCHITECTURE

RELIGIOUS BUILDINGS FOR TODAY

edited by JOHN KNOX SHEAR, A. I. A.
Editor-in-Chief, Architectural Record



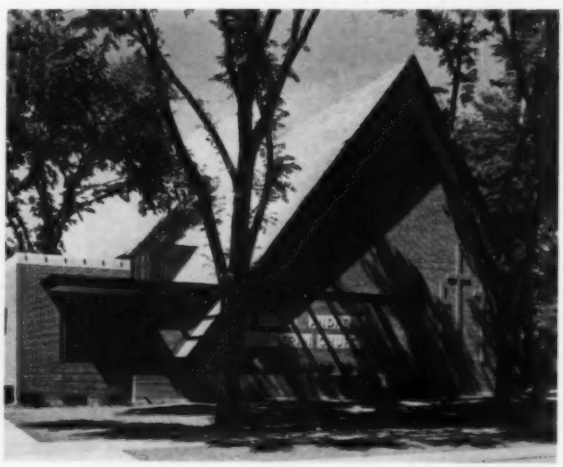
Presents 35 new religious buildings, each of which is the work of a gifted architect collaborating with a clergyman and building committee who were not afraid to break with the architectural past. The 35 buildings represent all denominations, and are from many areas of the world, although the majority are in the United States. Each building is shown in several brilliant interior and exterior photographs, as well as plans and drawings.

In addition, there are several other valuable sections in this comprehensive book. One is called "Worship and the Arts." The opening essay of this section thoughtfully and meaningfully explores the relationship between eternity and the moment — as it pertains to the design of churches. There follow six articles by leading clergymen on worship and the arts in their particular tradition — Jewish, Catholic, Orthodox, Episcopal, Reformed, and Lutheran. Each is illustrated with an outstanding new building of that faith.

There is also a series of cogent studies by leading architects, clergymen, and secular authorities. One is by a noted economist, who predicts that 70,000 churches will be built or substantially rebuilt in the U.S.A. in the next ten years. Another, titled "A Religious Architecture for Today," attempts to define the religious architectural requirements of the atomic age, so that our churches may represent us just as the Gothic, Byzantine, and Baroque churches and cathedrals did in their time and civilization. There are four more studies of equal interest.

With over 300 excellent illustrations, a complete bibliography, and a comprehensive index, RELIGIOUS BUILDINGS FOR TODAY will be a source of delight for everyone interested in religious art and architecture, and an inspiration for everyone concerned with planning and building the new church.

184 pages, large 8¾ x 11⅝" size
over 300 brilliant illustrations
only $7.50



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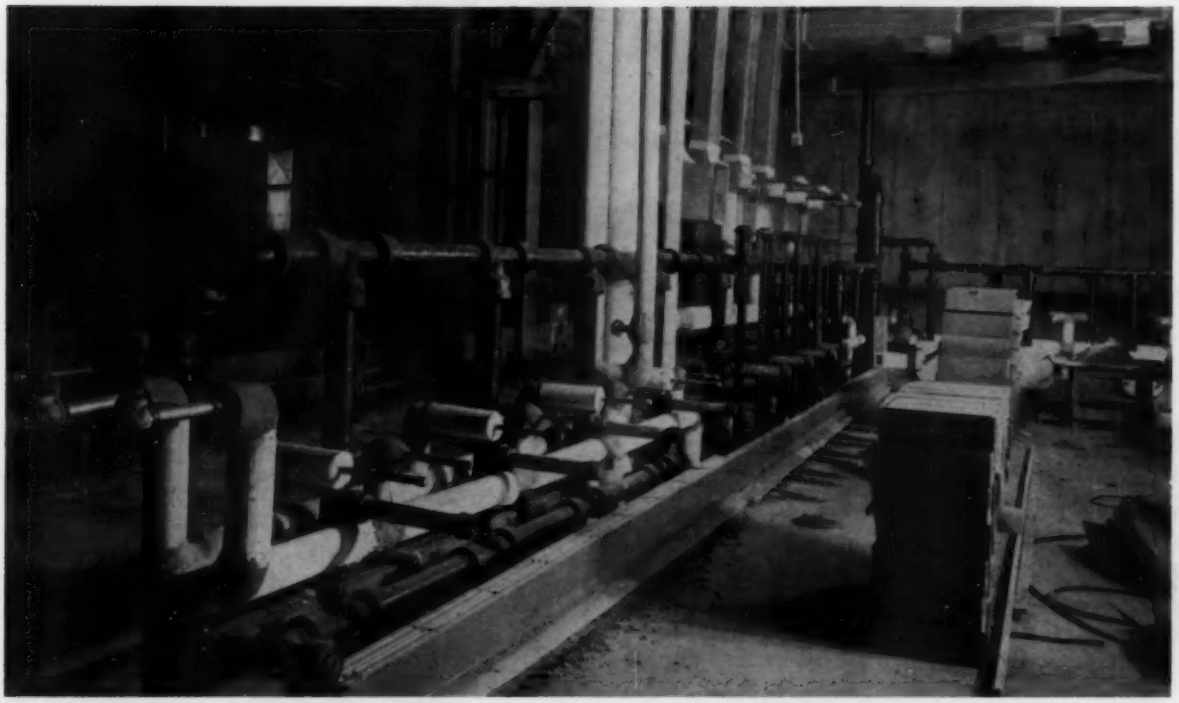
CAST IRON SOIL PIPE AND FITTINGS

in Purdue University's New Union Hall of Music Annex



Cast Iron Soil Pipe and Fittings roughing-in for closets and lavatories.

Part of building showing 8" Cast Iron Soil Pipe suspended underground sewer and two 6" downspout connections.

Air view of campus, showing $8,500,000 Purdue Memorial Union Hall of Music Annex. Steel framework of building in foreground.

One of the most architecturally beautiful and soundly constructed buildings on the campus of Purdue University, Lafayette, Indiana, is the $8,500,000 Memorial Union Hall of Music Annex. This structure contains a conference hall, two theaters and a large addition to the library.

Pictured here are several of the many installations of Cast Iron Soil Pipe and Fittings in this imposing Hall of Music which assure drainage that is both trouble-free and permanent.

In any building — modest home, costly mansion or structure such as this — it pays to specify Cast Iron Soil Pipe and Fittings for long run economy and lasting satisfaction.

Our Company does not manufacture Cast Iron Pipe, but supplies many of the nation's leading foundries with quality pig iron from which pipe is made.

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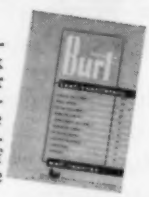

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MEMBER POWER FAN MANUFACTURERS ASSOCIATION

(Continued from page 342)

vote much time to it, simultaneously carrying on important creative work. I am, for example, the architect for the V.I. Lenin Central Stadium, recently completed and opened to the Public in Moscow. This is a large sports complex, embracing a main arena with a seating capacity of 100,000, and open-air swimming pool with seats for 13,000 spectators, a small stadium for ball courts with accommodations for 16,000 spectators, a roofed stadium with seats for 17,000, and many other structures. The whole sports park embraces an area of over 170 hectares and was completed in one and a half years.

At the present time I am preparing to take part in the recently announced closed competition for the design of the Palace of Soviets — a monument to V.I. Lenin. This work will be of the greatest creative interest to me; I tackle it with great satisfaction.

I want to take this opportunity to warmly greet the head of the American house construction delegation, Mr. Earl Smith, and all the other members of the group who recently visited the Soviet Union with him. I would also like to convey my regards to the American builders and architects with whom I had the pleasure of coming into contact in the United States. I am deeply convinced that the cultural relations between professional men and women of our countries will promote a better understanding and help to develop mutual exchange of practical experience for the benefit of both sides.

At any rate, my personal acquaintance with American housing design and construction has been extremely useful; American cities were always a source of lively interest to me, an interest that has been gratified by my visit. American dwellings, their fittings and furnishings, landscape layouts and their domestic spirit — all have left me with deep and definite impressions.

Of great interest to me was American technique and its building materials industries, with whose aid American architects create their buildings.

A great source of satisfaction also was my visit to Mr. Frank Lloyd Wright, whose work had interested me when still a student. My visit afforded me the happiness of direct acquaintance with the talented work of this outstanding architect and a chat with the man himself, for whom I express my deepest respect.

I most sincerely wish my American colleagues further success in their efforts to create worthy additions to the treasure-house of world architecture.

GER-PAK -- THE SHORT WAY TO SAY SUPERIOR POLYETHYLENE FILM

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Ends Wet Basements Forever!

Designed To Meet FHA Requirements

Now stop the age-old problem of keeping basements dry! Ger-Pak polyethylene film — the perfect moisture-vapor barrier material — permits no moisture transmission and will last the life of the building!

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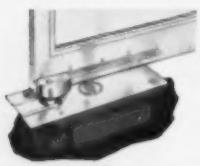

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THE RECORD REPORTS

WASHINGTON REPORT

(Continued from page 32)

structure from collapsing, so that personnel can be protected and the contents of the building salvaged; or it may be required that the building shall still be capable of use for conventional loads after the blast. This is the critical decision that must be taken before design of the structural members and connections to supply the required strength and stiffness.

The Defense Department cautiously looks into the new era with this statement: "The detailed methods and procedures of dynamic design are probably necessary in order to predict accurately the behavior of a structure exposed to loading from a blast wave. However, this requires familiarity with methods not customarily used in conventional engineering design."

Such a comprehensive report on the effects of nuclear weapons is particularly timely. The current series of tests at the Nevada proving grounds is turning up new data on how buildings stand up against weapons, what protection is required in the design stage, and what types serve best to shelter their inhabitants under varied conditions of exposure. And from the Government Operations Committee of the House of Representatives came a report, long in preparation, calling for a start on an ambitious program of shelter construction.

Much of the material contained in AEC's latest analysis of weapons effects is a pick-up from observations of tests run over several years; for the first time it assembles this data with new interpretations in the light of nuclear technology. The opening chapters deal with the general principles of nuclear explosions, descriptions of these in considerable detail, air blast phenomena and effects, and structural damage from air blast. For the first time there is an effort to analyze comprehensively the effects of residual nuclear radiation and fallout, and another chapter deals specifically with world-wide fallout and long-term residual radiation.

Probably of the greatest interest to architects and engineers is the final chapter on protective measures. Following an introduction, this is divided into sections on blast-resistant structures, shelters for personnel, and protection from fallout. In this part of the book occurs a brief discussion of structural

(Continued on page 352)

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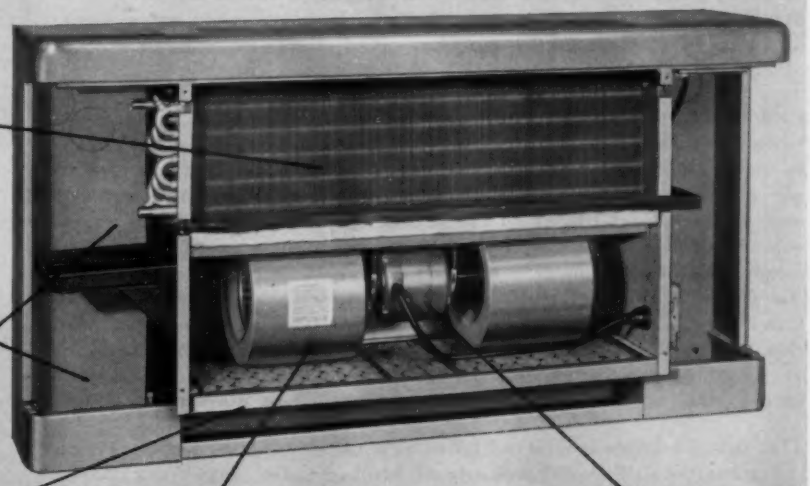

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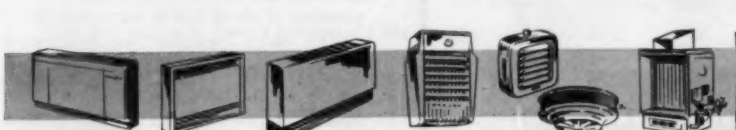

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THE RECORD REPORTS

WASHINGTON REPORT

(Continued from page 350)

materials which might have been written directly for the architect and engineer. It follows in its entirety:

"In choosing structural materials it should be borne in mind that the energy absorbed by a structure undergoing plastic deformation can make an important contribution to resistance to dynamic loading. Brittle materials, e.g., glass, cast iron, and unreinforced masonry, cannot tolerate strains beyond the elastic limit without suffering failure by rupture. Upon failure, these materials can produce dangerous missiles and so should be avoided for this reason also. On the other hand, ductile materials, e.g., structural steel, reinforced concrete, and reinforced masonry, can undergo considerable plastic deformation without collapse and, in many cases, without appreciable loss of strength.

"Reinforced concrete offers many advantages as a structural material, since it has characteristics desirable in blast-resistant construction. The large mass and sluggish response of the relatively heavy members, and the continuity which is possible, contribute to the ability to withstand lateral forces. Concrete can be used for shear walls which provide resistance to motion and add little to the cost of the building. The bulkiness of the members may be somewhat objectionable, although thick concrete walls can help in attenuating nuclear radiation."

In the matter of shelters for personnel, one type for mass occupancy is depicted in section. This is the plan conceived and laid out by the Federal Civil Defense Administration with the assistance of the Army Ballistics Research Laboratory, the Army Chemical Center, and the Armed Forces Special Weapons Project. The structural design was by Ammann and Whitney, consulting engineers, under contract to the FCDA. This underground personnel shelter is designed to hold 30 persons, but can be expanded for larger numbers. The design is based on experience gained at various nuclear tests in which shelters of this type have withstood peak overpressure of about 100 lb per square in.

The main chamber has reinforced concrete walls 15 in. thick; the floor slab is 18 in. thick, the roof 21 in. The chamber is covered with five ft of packed earth. Entrance is by concrete steps in two sections at right angles. At ground

(Continued on page 354)

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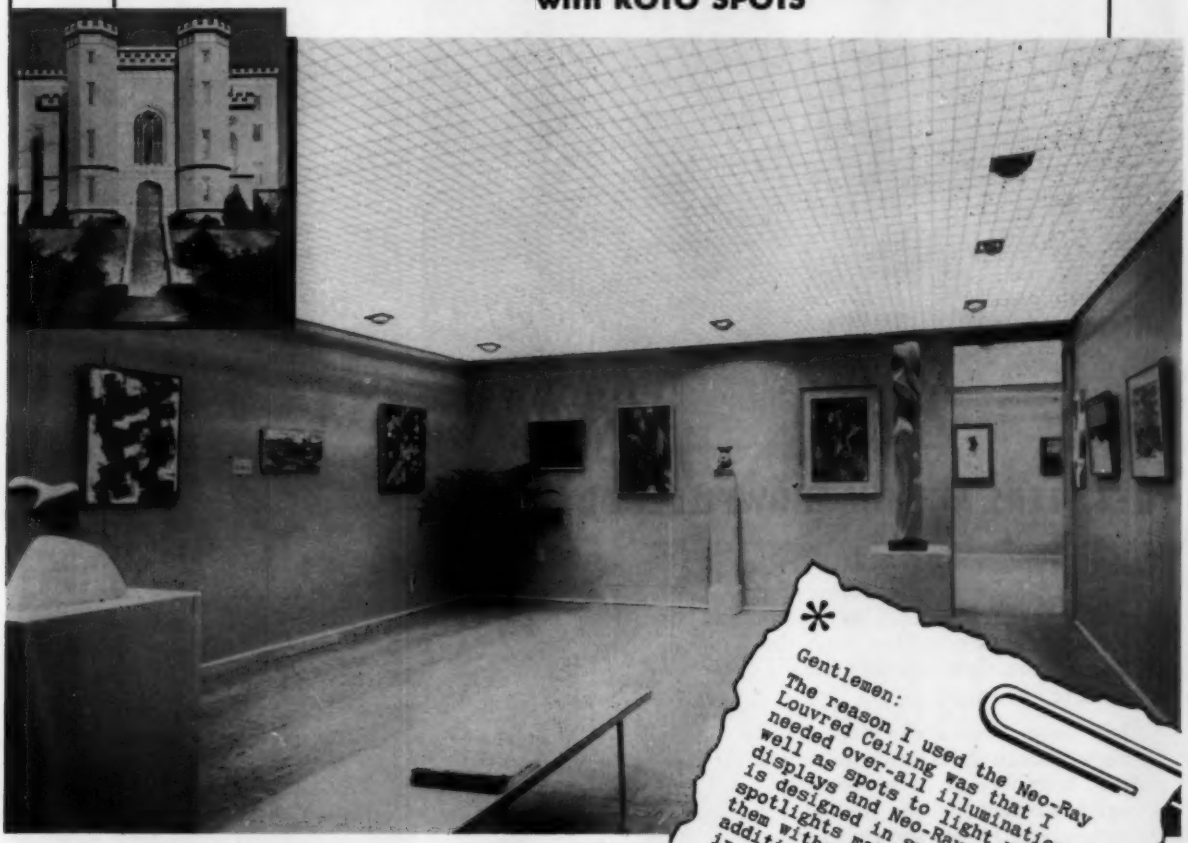

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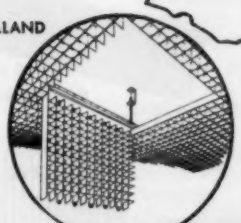

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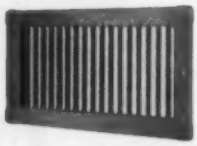

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THE RECORD REPORTS

WASHINGTON REPORT

(Continued from page 352)

level the stairway is closed by an 8-in.-thick horizontal door of structural steel and reinforced concrete. A heavy jack is mounted on the underside of the ceiling of the stairwell so the door can be forced open in case of debris accumulation in the well behind the door.

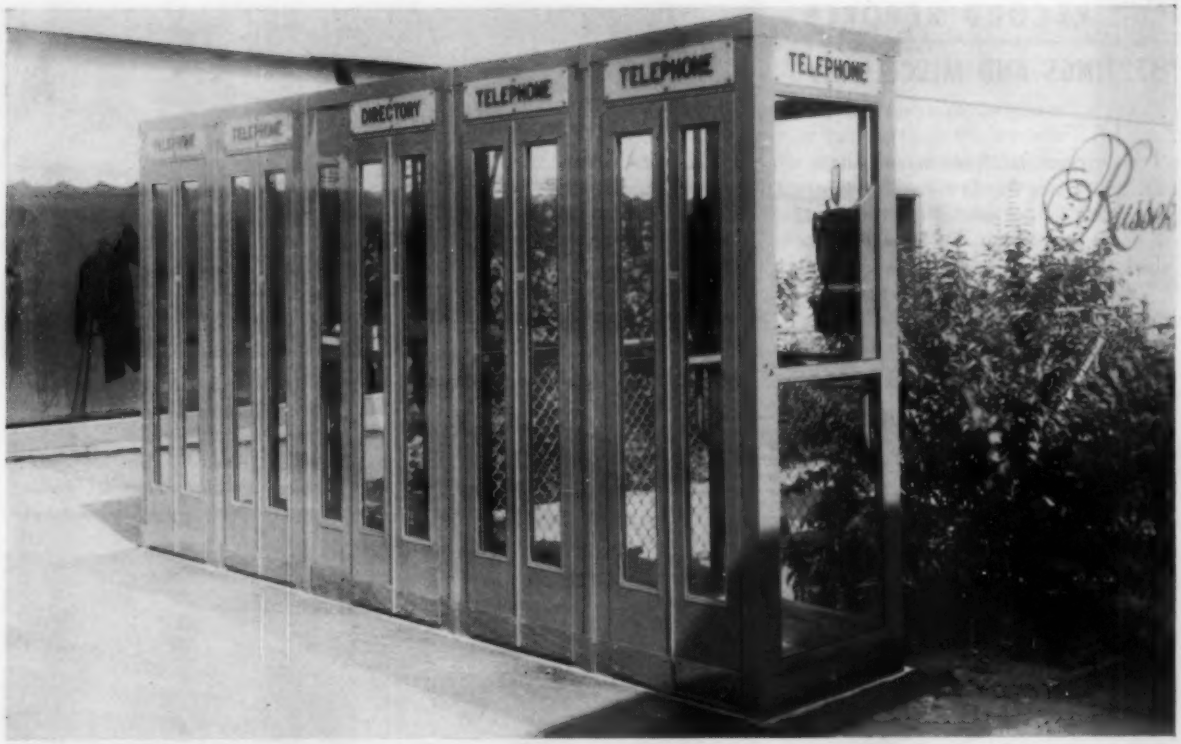
The Defense Department concluded that where essential industrial, civic, or military activities must be maintained before, during, and after a nuclear attack, it might be desirable to have a group shelter which could be occupied continuously, although not necessarily by the same individuals. Such shelters would, of course, have to have suitable ventilating systems.

It is pointed out that many subways would provide reasonably good emergency shelter. But these are few, and building basements are suggested as alternatives. "In this connection, a fire-resistive, reinforced concrete or steel frame structure is to be preferred, since there is less likelihood of a large debris load on the floor over the basement. Even basements of good buildings are not, however, an adequate substitute for a well-designed shelter, since the design live loads of floors over basements are usually small in comparison with the blast overpressure to which these floors may be subjected."

Ideally, says the Commission's handbook, a shelter for personnel should protect against air blast, ground shock, thermal radiation, initial nuclear radiation, and residual nuclear radiation from fallout. But because of so many unknown factors, it is virtually impossible to construct such a shelter. Design must represent a compromise involving an element of risk.

As for homes with basements, simple and inexpensive shelters can provide additional protection that could mean survival in nuclear attack, it was said. Other worthwhile measures for basementless houses are described.

It is interesting to note this government position: past experience has indicated that standard engineering practices are adequate for the design of underground shelters which will withstand air blast overpressure of 100 psi. In the design, special attention must be given to ducts and ventilating equipment, doors, door frames and entrance ways, which are more vulnerable to air blast than the structures themselves.



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THE RECORD REPORTS

MEETINGS AND MISCELLANY

(Continued from page 24)

of ARCHITECTURAL RECORD, as moderator, and Dean Olindo Grossi of Pratt Institute's School of Architecture and engineer Fred Severud of New York as the speakers; the second day's session on "The Profession of Architecture, Its Significance, Its Responsibilities and Its Future," with B. Sumner Gruzen, F.A.I.A., as moderator, and speakers Clinton H. Cowgill, F.A.I.A., and Douglas Haskell, editor of *Architectural Forum;* and, on the last day, a session on "Architecture as a Social Art," with moderator Thomas Creighton, editor of *Progressive Architecture*, and speakers Edmund Bacon, executive director of the Philadelphia Planning Commission, and John T. Grisdale, F.A.I.A., of Philadelphia. Two competitions were held during the convention. In the annual awards program, the six buildings shown on these pages were chosen for special mention from a field of 46 entries

(Continued on page 358)

AWARDS OF EXCELLENCE: (above) Kissam Lane School, Glen Head, N. Y.; Vincent Kling, architect (AR, April 1957, pp. 236–244). (Below) Pottstown Hospital, Pottstown, Pa.; Vincent Kling, architect

AWARD OF EXCELLENCE: (above) Doctor's Office Building, Hackensack, N. J.; L. Freeland Fellgraff, architect

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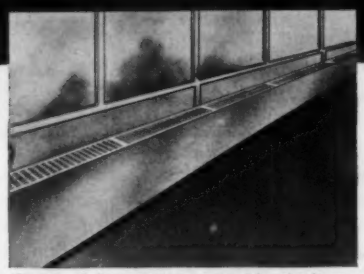

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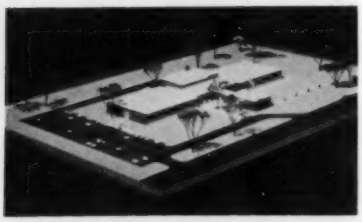
THE RECORD REPORTS

MEETINGS AND MISCELLANY

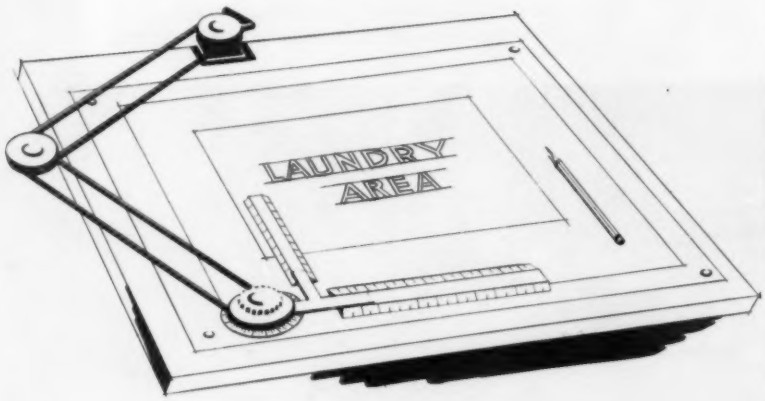
(Continued from page 356)

in the exhibition. Serving on the jury were Mr. Grossi, Mr. Haskell and Mr. Shear. This convention also saw the initiation of a Master Draftsmen's Competition, in which awards were made in three categories: Class A, for draftsmen with 15 or more years of experience; Class B, for five to 10 years experience; and Class C, for draftsmen with less than five years experience. The winner in Class A was Aron Miller of the office of David Ludlow, Summit, N. J.; in Class B, Carleton B. Riker Jr., of Drake, Tuthill, Connery and Currans, also in Summit; and in Class C, Joseph M. Sepos Jr. of the firm Frederick Elsasser in Union, N. J. Officers elected at the convention, to serve both the Society and the chapter for the next year, included: Eugene M. Dennis, Elizabeth — president; Marcel Villanueva, Orange — first vice president; Jacob Shteir, Newark — second vice president; Jay C. Van Nuys, Somerville — treasurer; and John Scacchetti, Union City — secretary.

AWARD OF EXCELLENCE: (above) regional office for the Prudential Insurance Company of America, Millville, N. J.; Frank Grad & Sons, architects



AWARDS OF EXCELLENCE: (above) Mercerville Elementary School, Hamilton Township, N. J.; Kramer, Hirsch & Carchidi, architects. (Below) Junior High School 22, New York City; Kelly & Gruzen, architects



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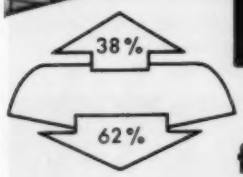

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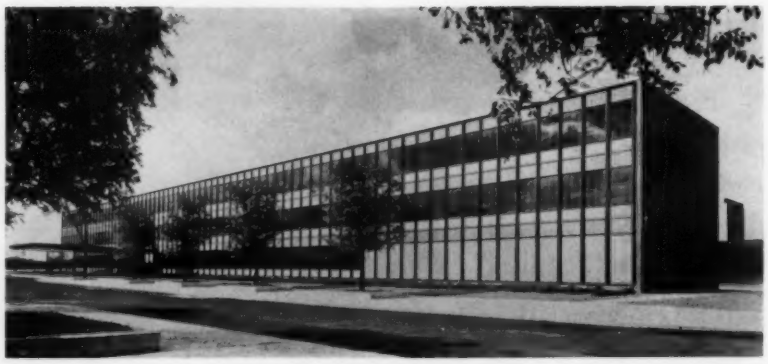
THE RECORD REPORTS

(Continued from page 28)

nado, Cal., and possibly Hartford, Conn.; November — University of Pennsylvania, Philadelphia; December — J. B. Speed Art Museum, Louisville; January 1958 — Canton, Ohio, Art Institute; February 1958 — Rensselaer Polytechnic Institute, Troy, N. Y.; May through August 1958 — circulated in the Seattle area.



Above, from exhibition "Structural Steel in Today's Architecture": General Motors Technical Center, Warren, Michigan; Eero Saarinen & Associates, architects

Above: Hillside Church, Whittier, California; Albert C. Martin and Associates, architects and engineers

Above: Crown Hall, Illinois Institute of Technology, Chicago, Illinois; Ludwig Mies van der Rohe, Pace Associates, architects

Above: Philip Johnson House, New Canaan, Connecticut; Philip Johnson, architect

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High Pressure Laminated

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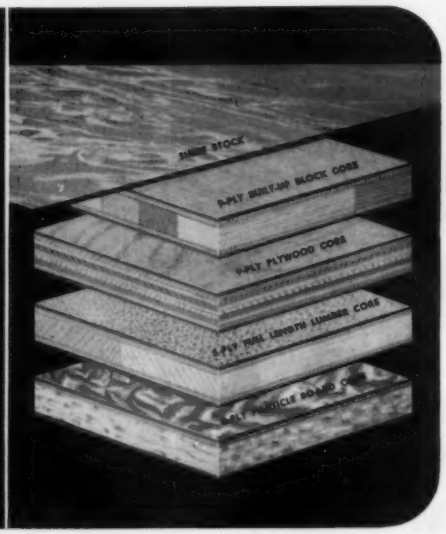
IN SHEETS, PANELS OR COMPLETE TOPS



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Farlite decorative plastic surfacing undergoes constant control tests for color fastness, heat and mar resistance, non-stain qualities, water absorption, de-lamination, warpage, and strength. Each sheet is individually inspected . . . *must meet or exceed NEMA standards!*

Farlite 1/16" sheet stock runs 24" to 48" wide, 48" to 84" in length, with backs sanded for cold gluing. Panels are available in 24" to 36" widths, 42" to 84" lengths, or 48" x 48" and 48" x 60". Select from regular or smoker-proof grades in high-gloss, furniture (rubbed), or non-glare finishes.

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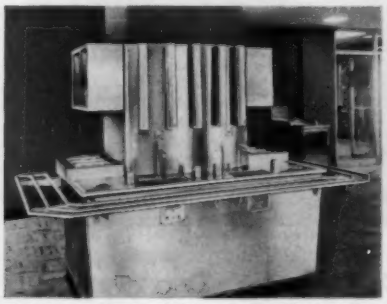
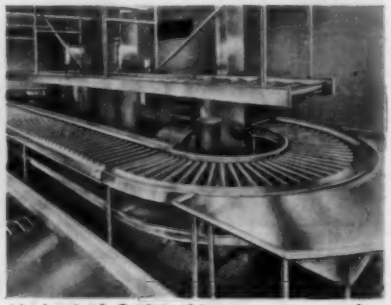
Double line Cafeteria Counter (one of 5) serves 8 to 10 persons per minute. Note cantilevered cases and three bar seamless stainless steel tray slide.

Efficiency-geared Stainless Steel Kitchen has every provision to simplify cooking operation. Note stainless steel, wall hung kettles with flush mounted drip pan.



Advanced Design Water & Condiment Station with automatically actuated chilled water faucets. Refuse can is concealed in lower section.



Mechanized Dishwashing – scrapes, washes and sanitizes, and dries in a swift continuous operation. Soiled gear belts extend into dining rooms.

TRAVELERS' decision to build a new restaurant where its employees could enjoy good food and service inexpensively–provided some difficult mass feeding problems. Daily requirements called for a minimum of 4,000 meals to be served in approximately 1½ hours! Speed and efficiency therefore, were essential. Blickman designed and installed a completely integrated, one level food service system which eliminates waste motion... minimizes labor requirements...saves money.

The entire installation is predicated on long lines of straight, uninterrupted food flow. Food preparation passes from storage to steam and surface cooking to cafeteria in a direct line. Five high-speed cafeteria lines, each capable of serving 8 to 10 persons per minute, insure swift service without confusion...without duplication. A complete intercommunications system... soiled gear return belts...mechanized dishwashing and other advanced features combine to further reduce labor costs...increase efficiency.

Cafeteria and kitchen equipment are of durable, stainless steel construction, with rounded corners, rolled edges and crevice-free surfaces to simplify maintenance ...aid sanitation. Blickman's experience in planning, fabricating and installing food service *systems* can be applied to your problems. For details write: S. Blickman, Inc., 7009 Gregory Avenue, Weehawken, New Jersey.

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BLICKMAN
FOOD SERVICE EQUIPMENT

THE RECORD REPORTS

ON THE CALENDAR

September

IV International Architectural Exhibition and III International Contest for Schools of Architecture, sponsored by the São Paulo Museum of Modern Art in connection with its IV Biennial; through December

3–6 Sixth annual conference, United States Civil Defense Council — Hotel Statler, Detroit

6–7 Western Mountain Regional Conference, American Institute of Architects — Jackson Hole, Wyo.

9–12 The New Highways: Challenge to the Metropolitan Region; a symposium sponsored by the Connecticut General Life Insurance Company — Bloomfield, Conn.

9–13 National Technical Conference, Illuminating Engineering Society — Biltmore Hotel, Atlanta

9–13 The 12th annual Instrument-Automation Conference and Exhibit, sponsored by the Instrument Society of America — Cleveland Auditorium, Cleveland

9–19 First International Seminar on Hospital Construction, sponsored by the International Hospital Federation and the International Union of Architects, with the assistance of the World Health Organization — Amphithéâtre des Policliniques, Geneva

17–18 Plastics for Roof Construction; fourth meeting of Building Research Institute Plastics Study Group; open to all interested in the construction industry — Washington University, St.Louis

19–21 Annual convention, New York State Association of Architects — Hotel Statler, Buffalo

19–21 New York Regional Conference, American Institute of Architects — Hotel Statler, Buffalo

22–25 Annual Convention, American Public Works Association — Philadelphia

22–26 The 59th annual conference, American Institute of Park Executives—Leamington Hotel, Minneapolis

23–25 Fall meeting, American Society of Mechanical Engineers — Statler Hotel, Hartford, Conn.

23–25 Sixth annual meeting, Standards Engineers Society — Hotel Commodore, New York City

25–27 North Central States Regional Conference, American Institute of Architects — Faust Hotel, Rockford, Ill.

25–27 The 36th annual convention and chapter presidents' conference, Producers' Council — Brown Hotel, Louisville

29ff National Planning Conference; theme, "The Cost of Urban Growth"; through October 2 — Hotel Vancouver, Vancouver, B. C.

30ff Annual convention, American Hospital Association; through October 3 — Hotel Traymore, Atlantic City

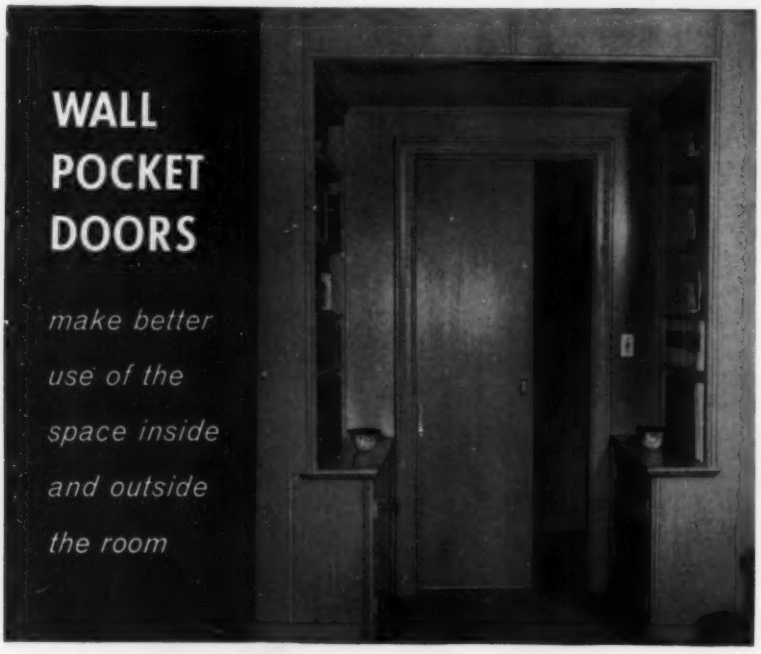
30ff Ninth Mental Hospital Institute; through October 3 — Hotel Cleveland, Cleveland

30ff National Recreation Congress, annual meeting of the National Recreation Association; through October 4 — Long Beach, Cal.

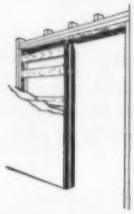
October

2–6 The 12th annual convention, California Council of Architects,

(Continued on page 364)



Sterling® **Pocket Door T-Frame**



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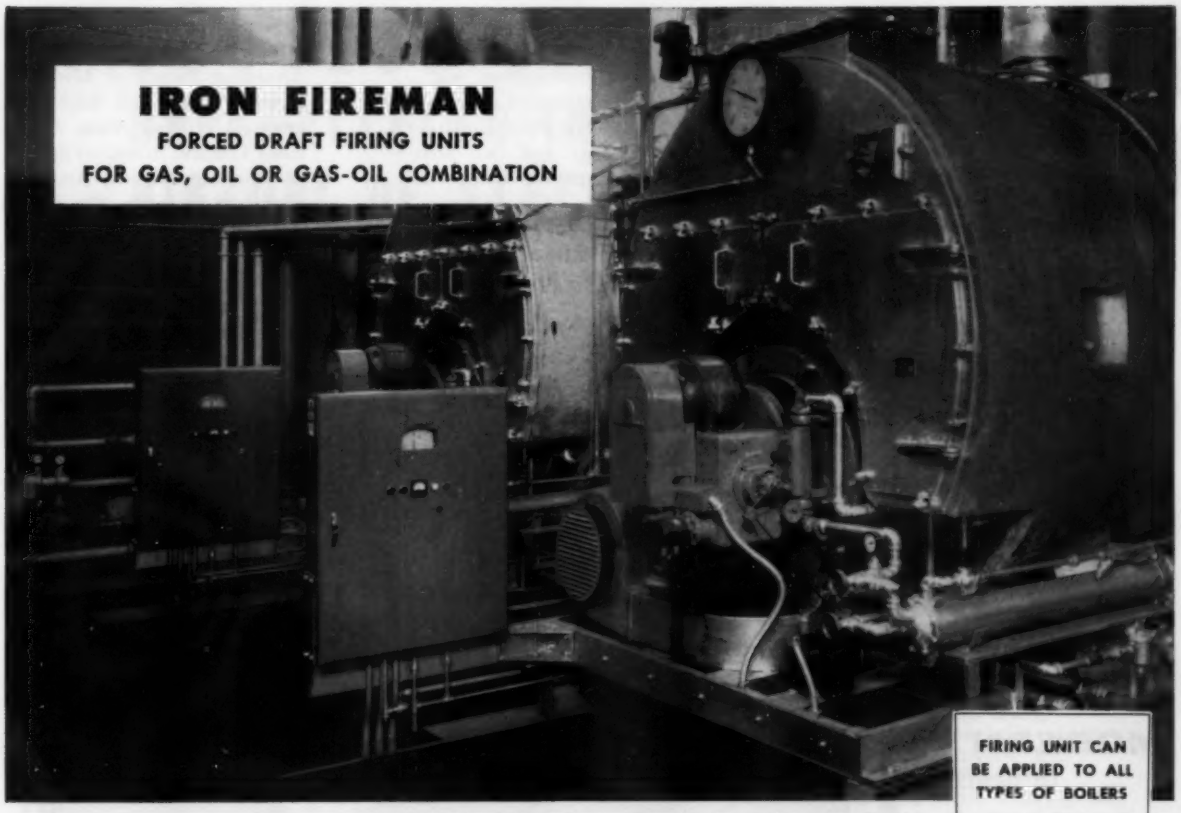

Typical installation of Iron Fireman packaged oil-gas firing units in Scotch type boilers. Illustrated are Kewanee-Iron Fireman boiler-burner units.

Here are features that Architects, Engineers and Owners appreciate

Easy to size and specify. After deciding on the fuel (gas, oil or gas-oil combination) and determining the required load, it is only necessary to refer to a simple chart to find the correct size of unit for your job.

Big reserve capacity. Boiler-burner units are conservatively rated. This means that the unit will carry its rated load at a comfortable "cruising speed." Maintenance costs are low, and high peak loads are taken in stride.

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Firing unit fits all types of boilers. The Iron Fireman forced draft burner is a complete firing system which requires no firebox alteration, no pit for underfloor air, no ignition arch. Easily applied to new or existing boiler settings.

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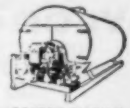
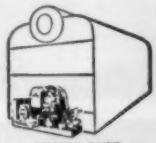

SCOTCH MARINE

STEEL FIREBOX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THE RECORD REPORTS

(Continued from page 362)

and California-Nevada-Hawaii Regional Conference, American Institute of Architects — Hotel del Coronado, San Diego

3–5 The 26th annual meeting, Porcelain Enamel Institute — Greenbrier Hotel, White Sulphur Springs, W. Va.

6–9 Gulf States Regional Conference, American Institute of Architects; theme, "The Architect and the Industrial South"—Dinkler-Tutwiler Hotel, Birmingham, Ala.

7–9 National Electronics Conference, Co-sponsored by Illinois Institute of Technology and two other universities and two other technical societies — Hotel Sherman, Chicago

7–11 Fall General Meeting, American Institute of Electrical Engineers — Chicago

10–11 Eighth Annual Noise Abatement Symposium, jointly sponsored by Armour Research Foundation of Illinois Institute of Technology, Acoustical Society of American, American Society of Safety Engineers, National Noise Abatement Council, American Society of Planning Officials, American Industrial Hygiene Association, Acoustical Materials Association and *Noise Control Magazine* — Sherman Hotel, Chicago

11–12 Fall meeting, Virginia Chapter, American Institute of Architects, and annual meeting, Virginia Society of Professional Engineers — Hotel Roanoke, Roanoke, Va.

11–13 Annual meeting, National Trust for Historic Preservation — New Ocean House, Swampscott, Mass.

13–15 Annual meeting, American Institute of Planners — Chicago

14–18 Annual meeting, American Society of Civil Engineers — Hotel Statler, New York City

15–18 Annual convention, National Council on Schoolhouse Construction — Milwaukee

17–20 Northwest Regional Conference, American Institute of Architects — Gearhart Hotel, Gearhart, Ore.

21–23 Annual conference, National Association of Housing and Redevelopment Officials — Sheraton Jefferson Hotel, St. Louis

21–25 The 45th National Safety Congress and Exposition, sponsored by the National Safety Council — Chicago

23–26 Architects Society of Ohio Annual Convention — Neil House, Columbus

27ff Fourth annual meeting, Atomic Industrial Forum, and third annual Trade Fair of Atomic Industry concurrently with fall meeting of American Nuclear Society; through November 1 — The Coliseum, New York City

28–30 Fourth annual atomic industry conference, sponsored by Atomic Industrial Forum — Plaza and Waldorf Astoria Hotels and Coliseum, New York City

30ff Texas Regional Conference, American Institute of Architects; through November 1 — Dallas

31 Conference on Reactor Safety, sponsored by American Nuclear Society, Atomic Industrial Forum and U. S. Atomic Energy Commission — New York

31ff Central States Regional Conference, American Institute of Architects; through November 2 — Hotel Skirvin, Oklahoma City

(Continued on page 366)

NEW *Streamlined* STYLING

MODERN in design

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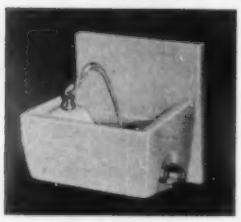

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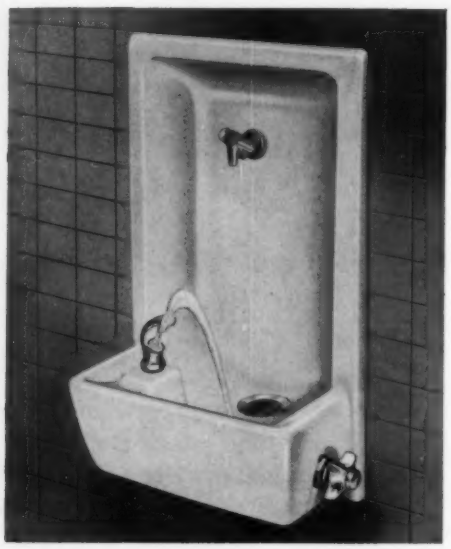

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THE RECORD REPORTS

(Continued from page 364)

November

4–7 The 1957 Building Products Exposition of the National Retail Lumber Dealers Association — Trade and Convention Center, Philadelphia

7–9 (Tentative) The 43rd annual convention, Florida Association of Architects — Fort Harrison Hotel, Clearwater, Fla.

10–16 Annual meeting, American Society of Sanitary Engineers — Fort Lauderdale, Fla.

11–15 National Hotel Exposition — Coliseum, New York City

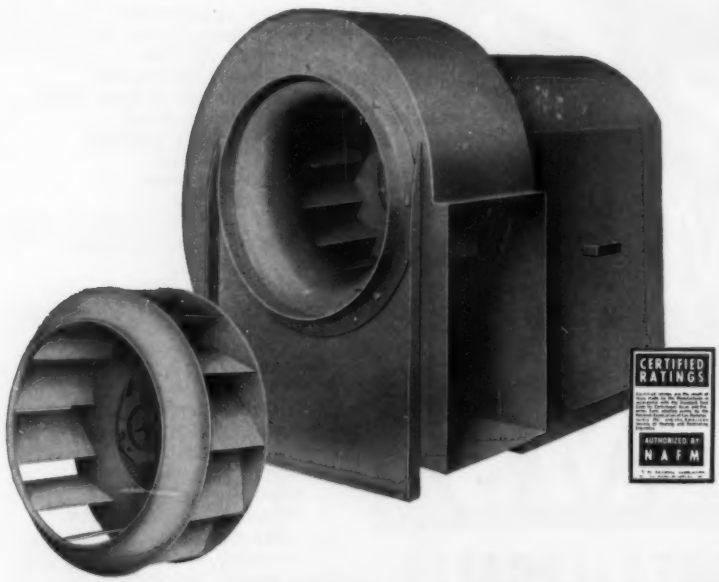
11–16 Meeting of the Board of Directors, American Institute of Architects — Phoenix, Ariz.

13–14 Air Pollution Conference, cosponsored by Armour Research Foundation and Midwestern Air Pollution Prevention Association — Chicago

13–15 Eighth National Conference on Standards, in conjunction with the 39th annual meeting of the American Standards Association, sponsor of the conference — St. Francis Hotel, San Francisco

13–27 Biennial Building Exhibition — London

18–21 Tenth Exposition of the Air-Conditioning and Refrigeration Industry — International Amphitheater, Chicago



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OFFICE NOTES

Offices Opened

• Curry, Martin and Taylor, Architects, is a new partnership formed by Grant Curry Jr., Derek Martin and Robert S. Taylor. The firm's offices are at 201 N. Craig St., Pittsburgh, 13, Pa.

• Rader and Associates, a Miami, Fla., architectural and engineering firm, have opened offices in Jamaica, B.W.I.

Firm Changes

• Frederick G. Frost Jr. & Associates have announced that S. Hart Moore, project engineer, and George J. Schwarz, project architect, have been named associates in the firm. Offices are at 144 E. 30th St., New York 16, N. Y.

• Stevens & Wilkinson, Architects-Engineers of Atlanta, have appointed William H. Barnett, Minton V. Braddy Jr. and Paul F. Jeffries associate members of the firm.

• Donn Weaver and Associates, Architects, announce the establishment of offices at 107 W. Perkins St., Ukiah, Cal. The firm succeeds Ingle and Weaver, Architects.

• E. Todd Wheeler, F.A.I.A., is now associated with Perkins & Will, architects and engineers of Chicago and White Plains, N. Y., as a consultant in the hospital, health and medical education fields. Mr. Wheeler was, from 1936 until 1944, a partner in the firm Perkins, Wheeler & Will. In Chicago, the firm is located at 309 W. Jackson, Chicago 6, Ill.

New Addresses

Fraioli-Blum-Yesselman, Consulting Engineers, 250 E. 43rd St., New York 17, N. Y.

Kenneth S. Iwata and Associates, Civil and Structural Engineers, 8277 Beverly Blvd., Los Angeles 48, Cal.

Gerad W. Wolf, Architect, 9514 Windsor, Overland Park, Kans.

(More news on page 368)

Wheeler HI-OUTPUT FIXTURES

deliver more light per foot of lamp length!

HI-OUTPUT "D-8500" LINE FIXTURES by Wheeler—designed for use with 100 watt and 60 watt rapid start lamps operating at 800 MA.

Diffuser apertures provide a small upward component of light to relieve severe brightness contrast . . . and allow for heat dissipation.

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"PACKAGE PLAN" LIGHTING —

the efficient, time-saving way to solve all your lighting requirements at one time . . . from one source!

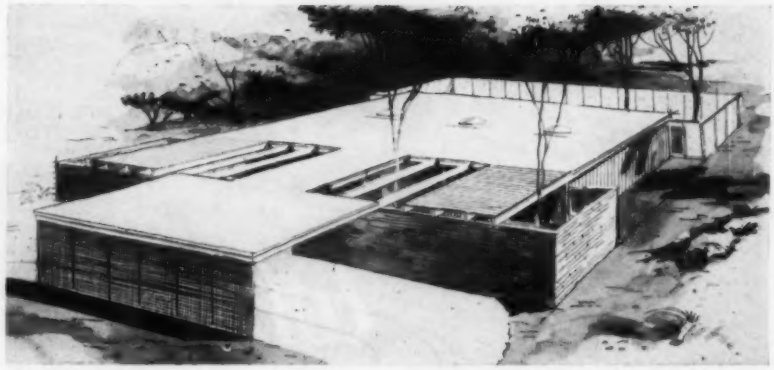
Distributed Exclusively through Electrical Wholesalers

THE RECORD REPORTS

(Continued from page 366)

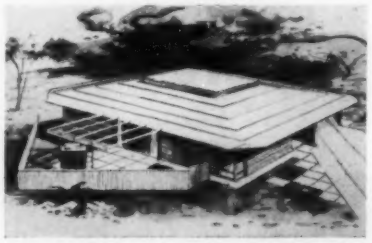
1957 DESIGNS APPROVED IN "ELECTRI-LIVING" PROGRAM

Twelve architects named to design the houses in the second annual edition of the "Electri-Living" Home Building program initiated by the magazine *Living for Young Homemakers* and co-sponsored by local utility companies and home builders' associations have completed design of the houses.



HOUSTON — Harwood Taylor, Architect; Houston Lighting and Power Company, sponsor

TAMPA — Mark Hampton, Architect, Tampa Electric, sponsor



OKLAHOMA CITY — Duane Conner, Architect; Oklahoma Gas and Electric Company, sponsor

Important program note for participating architects, and a prime ingredient of *Living*'s attitude toward domestic architecture, was the requirement that the houses be functionally and stylistically indigenous to the region in which they were to be built. Other major requirement: $18,000 selling price (exclusive of land).

In addition to the architects whose projects are shown here, the following have designed houses for this year's program: Boise, Idaho — Joseph M. LaMarche; Cincinnati — John A. Burdick; Greensboro, N. C. — Edward Lowenstein; Los Angeles — Palmer and Krisel; Sacramento, Cal. — Albert Dreyfuss; San Diego — Paderewski, Mitchell and Dean; Topeka, Kan. — James R. Cushing; Tulsa, Okla. — Wesley J. Crone; Winter Haven, Fla. — Donovan Dean.

(More news on page 370)

September 30 thru October 3—AMERICAN HOSPITAL ASSOCIATION 59th Annual Convention—Atlantic City, New Jersey Booth No. 221

Building blocks that spell . . .

. . . a NEW kind of modern *fire protection*

Modularm is a completely new fire alarm system of building block design. The building blocks are compact, modular units called Alarm Initiating Panels, Alarm Signal Panels, and Power Panels—all standardized and designed for economy. Combined, they produce any of these wide variety of UL-approved systems:

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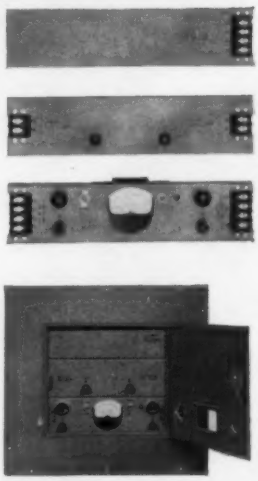

Integrated design, easy installation and superior performance make *Modularm* the most modern and complete fire alarm system available today. Write for Couch's Modularm Brochure #131.

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MASONRY UNITS

HOW ACCOMPLISHED:

Textured 8 x 8 x 8 inch Waylite Units stacked diagonally. Some units set in wall at different level for shadow effect.

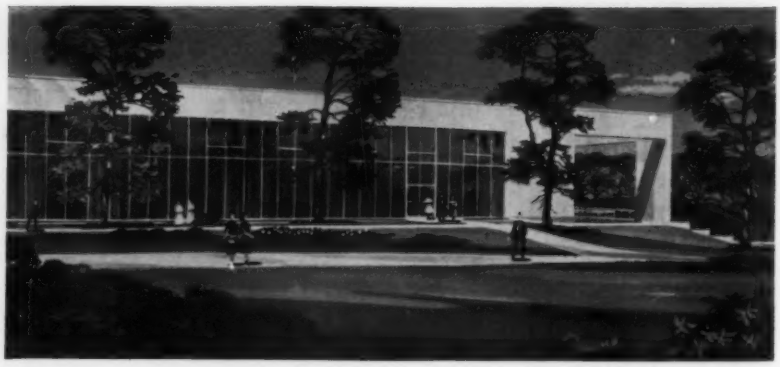
CREDITS:

Pub Bar and Restaurant, Philadelphia. Architects: Armand Carroll and Wm. J. Stephenson. Mason contractors: Casper Bros.

(Continued from page 368)

NEW BUILDINGS PLANNED FOR THE ROCKEFELLER INSTITUTE

Four new buildings, three of them nearing completion and the fourth to get underway soon, have been planned by Harrison and Abramovitz, architects, for the Rockefeller Institute, 55-year-old center for research in the biological and medical sciences which became a graduate university when its New York



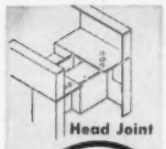
Residential and meeting facilities for visiting scientists and faculty members will be provided in Abby Aldrich Rockefeller Hall (above). Below: hemispherical dome of reinforced concrete, to be covered with brightly-colored ceramic tile, is auditorium of projected Alfred H. Caspary Hall; it will have offices and meeting rooms as well

State charter was revised in 1954. The buildings are being constructed on the Institute's 13-acre campus along New York's East River from 63rd to 68th streets.

The new buildings include a social and residential center for Institute faculty and visiting scientists (Abby Aldrich Rockefeller Hall) and an auditorium (Caspary Hall), both shown here in rendering, as well as a 13-room President's House and (last to be built) a graduate student residence.

Abby Aldrich Rockefeller Hall will contain living quarters for 24 visiting scientists, two large social halls, a library, a refectory and smaller dining rooms, a music room and a little theater. Caspary Hall has its main auditorium, seating 500, in a brightly-colored ceramic tile covered reinforced concrete dome 90 ft in diameter and 40 ft high; the building will also have six smaller auditoriums and conference rooms, and executive offices.

(More news on page 372)



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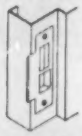

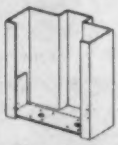

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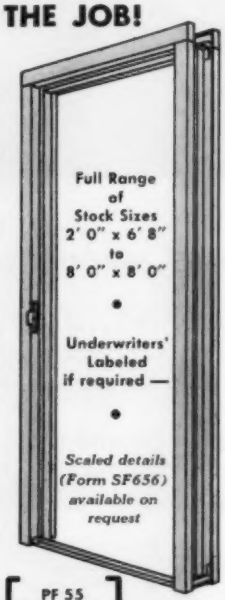
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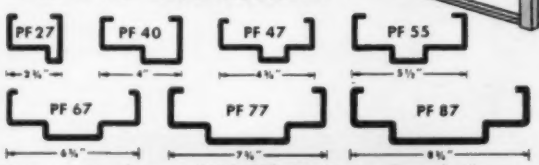

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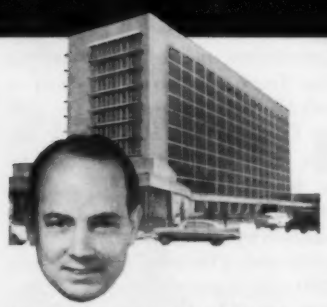
New Orleans' Mayor Morrison about to enter elevator in new City Hall (Councilmen at right).

Polite elevator doors allow Mayor to wait for important message.

Doors remain wide open while Mayor stands in the entrance.

Doors close promptly when entrance is clear.



Mayor deLesseps S. Morrison and the New Orleans City Council have their offices in the new City Hall, one of several buildings which comprise the modern Civic Center.

J-98745CA

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In the recently completed New Orleans City Hall, operatorless elevators never "close in" on passengers—or rush them into the cars. The reason?—basic politeness is built into Traffic Sentinel® doors, an original Westinghouse development for its modern elevator systems. Door openings and closings are synchronized to cope with the demands or needs of passengers.

You can see Traffic Sentinel doors in action in leading cities throughout the nation. If you are planning a *new* building, or contemplating modernization of an *older* one, ask your nearest Westinghouse Elevator representative for full details about operatorless elevators equipped with these always-courteous doors.

YOU CAN BE **SURE**...IF IT'S

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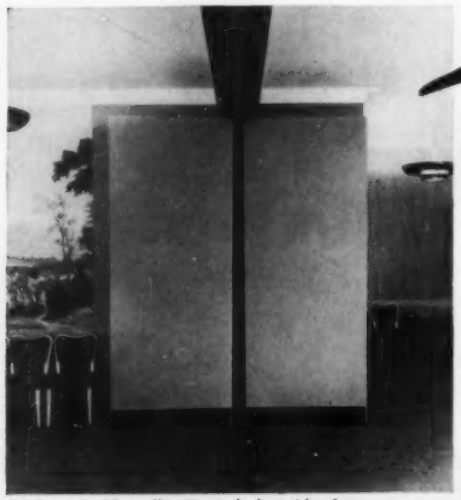
WESTINGHOUSE ELEVATORS AND ELECTRIC STAIRWAYS

 (Continued from page 370)

BRASS-ANODIZED ALUMINUM will be used, in pilasters separating natural aluminum panels for warehouse section, with glass for lower office section, of new building for Copper and Brass Sales Inc., by Giffels & Vallet, Inc., L. Rossetti



Fairhurst double wall units stacked at side of room.

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DOUBLE WALLS
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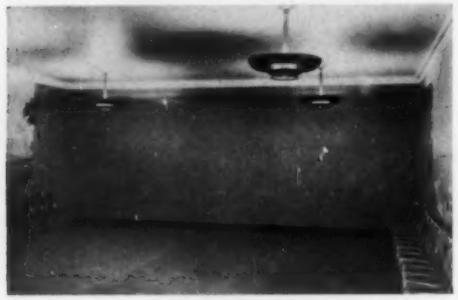

This Fairhurst Folding Wall divides Hotel Statler meeting room for double use, Buffalo, N. Y. Noel Simon, architect.

Here is an example of the most efficient sound retardance possible in folding wall construction.

The units of each Fairhurst Folding Wall interlock tightly, without bolts, hinges, or visible hardware as in other types. This solid, rigid construction, coupled with 6" insulating air space between walls, has been proved to block sound with efficiency approaching that of a 10"–12" 3-coat plaster brick wall.

Yet **Unitfold** is designed for easy hand operation, regardless of size of units. It's the work of a minute for one man to slide wall into place; or to store after use in convenient built-in pockets, completely out of sight.

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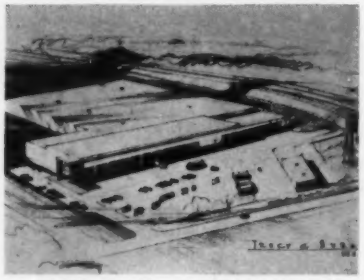
FAIRHURST . . First Name in Folding Walls

SHEATHING MATERIALS MADE SYMBOLS OF OWNER'S TRADE

The new headquarters of Copper & Brass Sales Inc. of Detroit, a warehouse and office building on a six-acre site, will have the most advanced equipment for materials handling, air conditioned office space and an exterior designed to symbolize the client's specialization in nonferrous metals.

The main warehouse section of the steel and concrete building will be sheathed in natural aluminum panels 30 ft high, separated by pilasters of aluminum anodized in the color of brass and framed top and bottom by flashing and sills of the same brass color. Office section will combine brass-anodized aluminum with plate glass in aluminum sash.



WAREHOUSE AND OFFICES FOR WHOLESALE GROCERS

A warehouse and distribution center for the Tracy and Avery Company of Mansfield, Ohio, designed by The Ballinger Company, Architects and Engineers, and Ballinger-Meserole Company, warehouse and distribution specialists, of Philadelphia, is under way on a Mansfield site. Total warehouse area of approximately 170,000 sq ft will contain 116,000 sq ft of grocery storage facilities, 20,000 sq ft of freezer and cooler space. Remaining 34,000 sq ft will be occupied by offices. Separate 5200-sq-ft garage will service 30 trucks; there will be parking for 80 cars.

(More news on page 374)

"You mean you get both air *and* light from the same unit?"

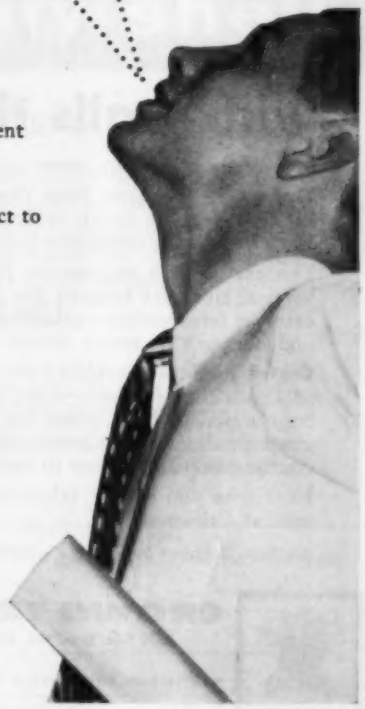
"That's right. It's the new **MULTI-VENT TROFFER** The air diffuser is completely concealed in the flush light fixture!"

There's more to the new **MULTI-VENT TROFFER** than meets the eye!

It combines a great advance in gently diffused, draft-free air conditioning, with modern, highly efficient lighting at a substantial savings in cost!

Complete concealment of the air diffuser within the handsome light fixture means freedom for the architect to design clean, uncluttered ceilings, greatly simplified mechanical planning for the engineer and . . . for the contractor . . . faster, easier field installation.

Write for detailed literature and the name of the representative in your area.



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THE RECORD REPORTS

(Continued from page 372)

FURNITURE MART BUILDING WELL UNDER WAY IN L. A.

The 900,000-sq-ft new building for the Los Angeles Furniture Mart, which got under way late last summer on a four and a quarter acre site in downtown Los Angeles at Broadway, Washington and Hill, is nearing completion. Architects are Earl Heitschmidt and Whiting S. Thompson; Beatty & Clar are engineers.

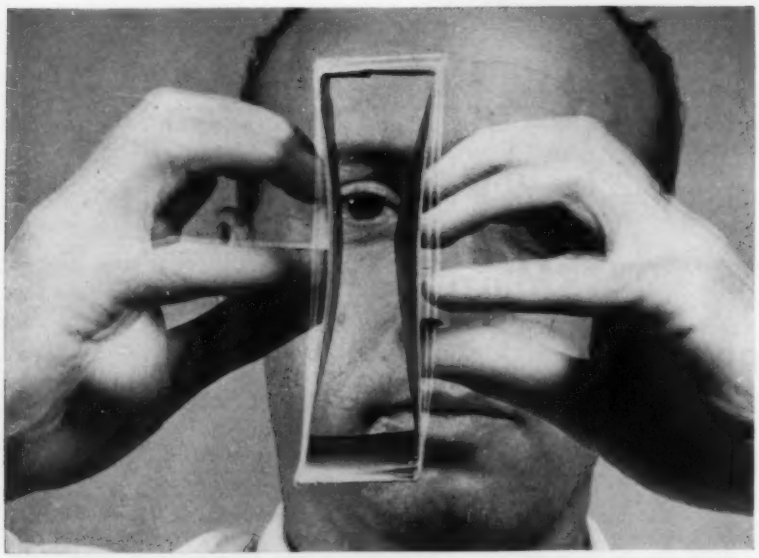
The building, which will have six acres of parking available to tenants on two sites adjacent to its own, will be operated by the present management and owners of the 20-year-old Los Angeles Furniture Mart, under a 25-year lease agreement plus four subsequent 10-year options with the Prudential Insurance Company of America, which will purchase the project upon completion.

Facilities to be provided include some 665,000 sq ft of wholesale showrooms, in addition to offices, meeting rooms, a 700-seat auditorium, restaurants and service facilities. Permanent offices for the administrative staff and trade associations will be located in the building.

Structure is reinforced concrete, exteriors are to be architectural concrete with steel sash, granite and terra cotta trim. Estimated cost is $7 million.

GROUNDBREAKING ceremonies held last summer found architect Earl Heitschmidt (fourth from left) among the dignitaries around the ceremonial shovels. Left to right: Los Angeles City Councilman Ed Roybal, Mart President A. W. Potter, General Contractor J. A. McNeil, Mr. Heitschmidt, Lt. Gov. Harold J. Powers, Deputy Mayor William C. McCann, A. M. Tysee of the Bank of America, County Supervisor John Anson Ford, Charles W. Lauve of the Prudential Insurance Company of America and Mart Executive Director A. V. MacDonald

(More news on page 384)



How to build a building with walls that . . . MOVE!

"Take a cereal box, press against its sides . . ."

That's how a Crown Iron Works engineer might describe how his firm licked a tough design problem on American Hardware Mutual's new Minneapolis home office.

The cereal box represents the thin, hollow, stainless-steel vertical ribs that support the glass wall. Normally, Minnesota's extreme temperature variations would make these panels expand and contract so much they'd be tough to hold weather tight.

Crown Engineers couldn't do anything about the temperature, so—with the architects—they devised a special elastic mounting for the panels. Now, when the walls contract or expand, a built-in spring-like action absorbs the movement. Result: a permanent, continuous wall as close to leakproof as any yet designed.

Next time you have a fabricating problem—any kind—give the men at Crown a call.

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Easy to Install – the recessed Concealed Vanity Shelf can be placed in any of several locations for your greater convenience. It is ideally located at the lavatory – between the top of the basin and the bottom of the mirror.

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THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 48)

— Continuation of the College Housing Loan Program of long-term Federal loans at low interest to both public and private colleges and universities for the construction of income-producing facilities such as dining halls and dormitories.

— That appropriate benefits of the slum clearance provisions of the National Housing Act be made available to urban educational institutions seeking to acquire land needed for expansion.

The committee reached this general conclusion in its discussion of the demands of the next 15 years: "No good would come . . . from presenting a softer picture of the hard difficulties faced by our colleges and universities in the years ahead, but these difficulties are not so great that they cannot be overcome by the American people if they set themselves to the task."

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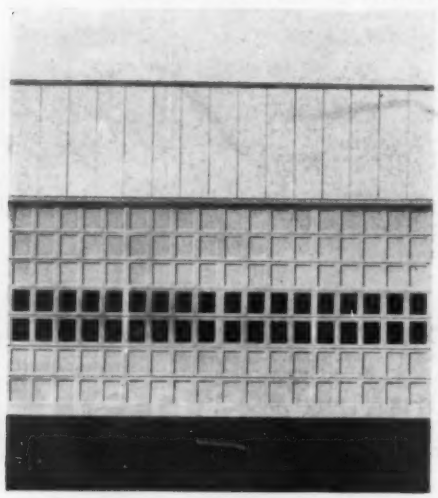

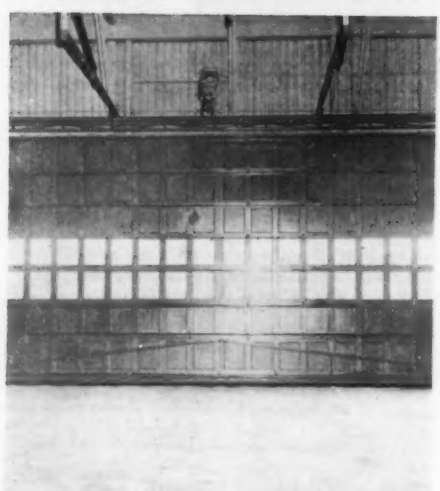

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FHA LOWERS DOWN PAYMENTS AND RAISES INTEREST RATE

A short but intense feud among the President's economic advisers and others of his Administration was settled last month — for the time being at least — when a series of moves was announced making it easier to buy homes under the Federal Housing Administration's loan insurance program.

These steps brought a sigh of relief from home builders and their suppliers, as well as realtors, who had kept up a barrage of statements urging the more liberal program from the time President Eisenhower signed the new housing bill July 12 until the looser regulations were announced on August 5.

The new regulations:

1. Lowered the minimum down-payment requirement on FHA-insured houses to three per cent of the first $9000 of appraised value, 15 per cent of the next $6000, and 30 per cent of the balance up to the $20,000 limit. This new schedule compares with five per cent of the first $9000, and 25 per cent of the balance, as established by FHA December 4, 1956.

2. Raised the maximum permissible interest rate on these mortgages from five to five and one quarter per cent. The FHA Commissioner could have used his discretion in raising the rate as high as six per cent under the law.

3. Established a maximum allowable discount of two and one half points. The ceiling will vary regionally.

4. Set a range of mortgage discount maximums on housing loans guaranteed by the Veterans Administration reaching from three to five and one half per cent, varying by region, where down payments are less than 10 per cent. Where down payments exceed 10 per cent, the permissible discounts can range from two and one half to five.

5. Fixed new purchase prices for FHA mortgages carrying the new interest rate — prices the Federal National Mortgage Association will pay. The new prices range from par to 98 for five and one quarter per cent mortgages, from 98 to 96 for five per cent, and 94 to 92 for four and one half per cent, varying by region and by the amount of the mortgagor's equity.

FHA Commissioner Norman P. Mason said the decision to raise the interest rate was made "in order to help the home financing market operate adequately" with the discounts now prescribed.

The 1957 housing act *permitted* the

(Continued on page 378)

Are we ready to... *air condition* our school rooms?

which way comfort?

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Roommate for offices

AudiCon for auditoriums

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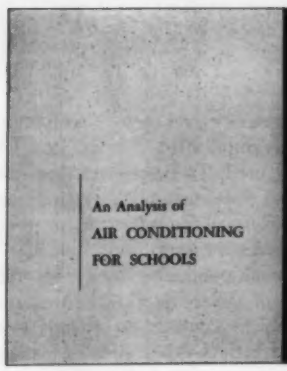
Are school boards ready? While many schools have not yet installed an adequate system of heating and cooling by controlled ventilation, many others find such protection indispensable—and even think of adding mechanical refrigeration for cooling at certain times of year. Needs vary in different parts of the country; but wherever school buildings are to be used all year round—and in areas where outside temperatures are often above 60° during the normal school term—a complete system of heating, ventilating, natural cooling, and air conditioning is the only assurance of a comfortable learning environment at all times. Therefore many school executives and board members are giving serious thought to air conditioning in tomorrow's schools.

Are taxpayers and bondholders ready? The people who supply the money for public education will have many questions about the cost of installing and operating year-round air conditioning, but the facts will be weighed against the benefits to students and community.

Are architects and engineers ready? Is contemporary school building design well suited to the employment of summer air conditioning? What effect upon design will the growing desire for year-round comfort protection have? How best design the system—for installation all at once or in successive stages?

IS NESBITT READY? With more than a quarter-century of experience in the manufacture of air conditioning components, Nesbitt is prepared to offer its Year'round Air Conditioners (*Syncretizer* and *Mainliner* for classrooms; *Roommate* for offices; and *AudiCon* for auditoriums). All Nesbitt Year'round units may be installed initially for heating and cooling by controlled ventilation, and the summer cooling components may be added later.

Are you ready? Whatever your relation to the school field, you probably have questions: What is involved in air conditioning a school? What are the initial and the operating costs? What must be considered before deciding to install controlled ventilation now and mechanical refrigeration later? These and many other questions are answered in the treatise by Nesbitt engineers, "An Analysis of Air Conditioning for Schools." Mail this coupon for your free copy.



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WASHINGTON TOPICS

(Continued from page 376)

housing agency to take the lower down-payment action. From that wording a storm of controversy developed when it appeared likely the Administration would do nothing — at least right away — with its new authority. The FHA was directed to lower the requirements only when, in its judgment, it was in the public interest to do so. Commissioner Mason said last month his studies had determined that it would be in the public interest to give effect to this part of the new law. The new regulations went into effect immediately.

The Housing and Home Finance Agency said the actions were expected to help channel more available funds into financing lower-priced homes "and facilitate the acquisition of home ownership by families in the lower and middle income groups." It added that the discount controls were devised to interfere as little as possible with this process. HHFA also anticipated that the new financing rules would lessen any disturbances arising from the termination next July, for World War II veterans, of the GI home loan guaranty program.

MILITARY BUILDING HIT ON VARIATIONS IN STANDARDS

The Defense Department's construction program was roundly criticized in a House Appropriations Committee report last month.

The committee members did not wield the economy axe too sharply in dealing with the Air Force, Army and Navy budget requests; but there were some generalizations on the handling of construction procedures that amply demonstrated Congressional annoyance with the handling of such funds by the services.

The report stated that despite the correction of many weaknesses in the administration of building programs and (at times) a lack of direction in military construction activities, the committee "must continue to express dissatisfaction with the inadequate progress that has been made in standardizing specifications which would place the three services on a comparable basis." A more concerted effort must be made by the Office of the Secretary of Defense to insure that all services are treated equally, it stated.

The economy fever was apparent in many places in this report. As in its findings on the regular Defense Department bill for fiscal 1958, the committee in reporting the supplemental legislation containing the construction funds urged that every effort be made to make greater use of facilities in the interest of efficiency and economy.

It called upon the Defense Department to consider use of existing bases now closed or scheduled for closing before construction of new projects is initiated or before projects are expanded. Said the report: "The committee is opposed to the construction of any project where there are existing facilities not fully utilized and which are reasonably usable for carrying on the approved activities."

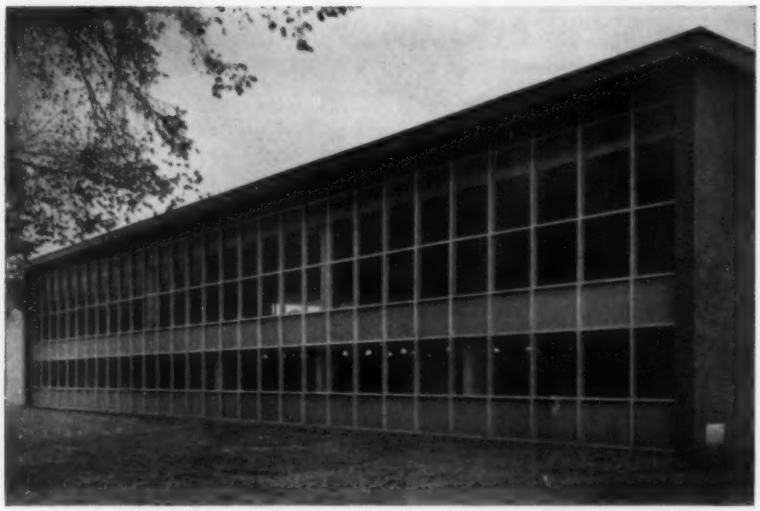
The services were directed to eliminate any items duplicating existing facilities not fully used. To insure against "unwarranted construction," a new section prohibited use of funds for starting work on new bases not specifically funded.

The much-publicized family housing program of the services did not escape the committee's wrath. So strongly was this dealt with that initiation of further

(Continued on page 380)

FROM START TO FINISH

Michaels Curtain Wall Service is Complete



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In addition to curtain wall systems, Michaels manufactures many architectural metal building products in stainless steel, aluminum and bronze. We believe it will be to your advantage to contact Michaels on your next project. For additional information, look in Sweet's.

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1000-BED HOSPITAL ADDITION

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In the photo, you get a bird's eye view of the $7,200,000 addition to the Naval Hospital at San Diego. Designed to reduce overcrowding of patients, the nine-level building represents a 1000-bed peace-time addition to the Naval Hospital facilities.

In keeping with the overall high quality of the building are plastered ceilings and walls that will keep their trim, sleek appearance for years to come. That's because they all have a firm foundation of Penmetal Meshtex lath.

In fact, 17 carloads of Penmetal materials went into the hospital's construction, including 3.4 painted Meshtex, cold-rolled channels, partition studs, base screeds and expanded-wing corner beads.

For the present, the Naval Hospital addition will be used mostly for surgery and related treatments. Facilities include a ramp which leads down to the emergency entrance area; outlets to provide for closed circuit television for observation purposes have been installed; and a galley capable of serving 6000 meals a day.

The Naval Hospital addition is in keeping with a trend: More and more fine buildings contain Penmetal products. Write for 16-page catalog 617-L.

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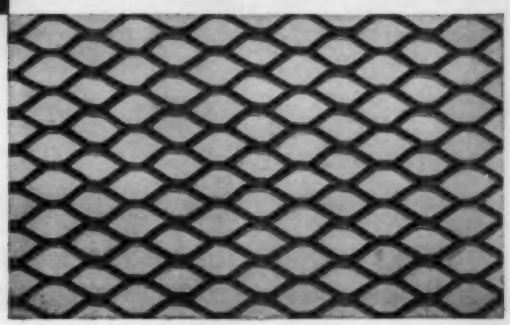


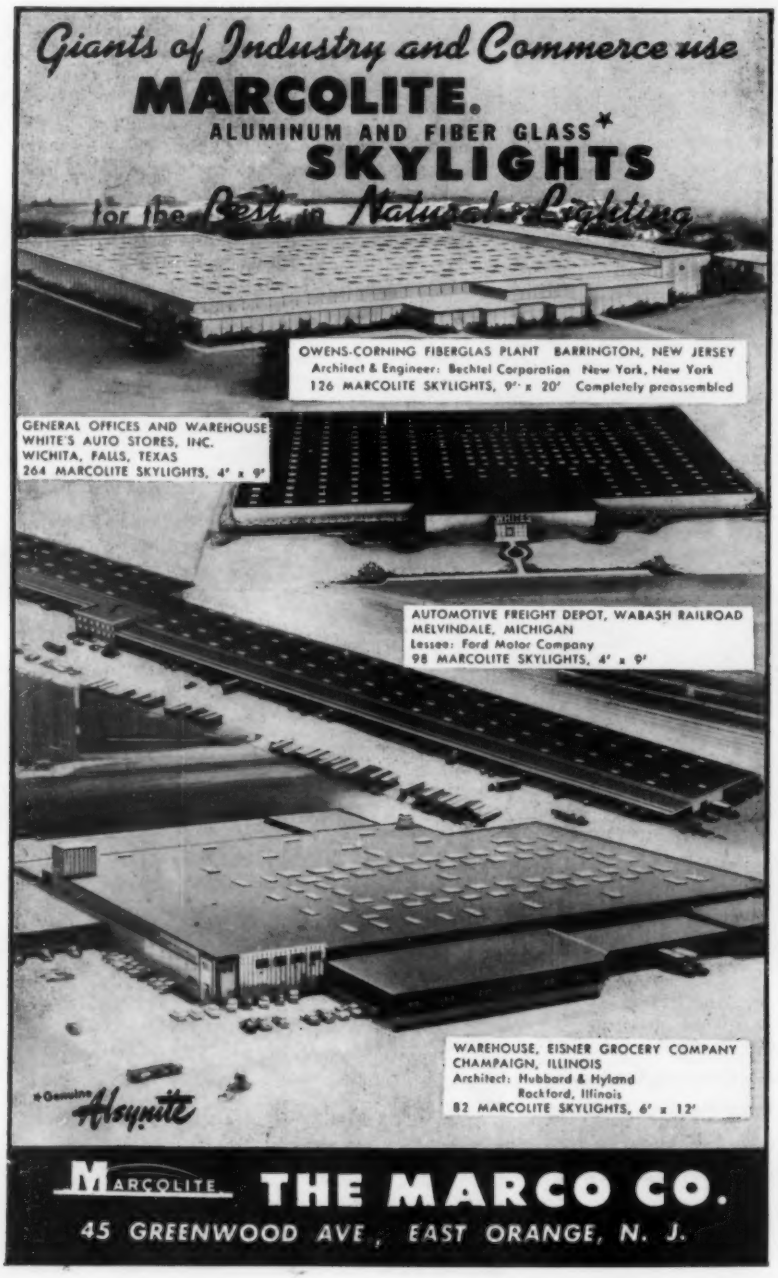
THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 378)

Capehart housing construction was prohibited prior to the acquisition, or definite agreements for the acquisition, of Wherry housing where the same location is served by both. The committee's comments:

"All evidence would seem to indicate a lack of coordination and agreement on objectives between the Office of the Secretary of Defense and the three services. The Wherry housing acquisition program has been completely unsatisfactory to the committee. Seemingly unwarranted delays have resulted, not only in no housing, but in confusion and uncertainty among owners of these Wherry housing projects who built them in good faith and at a time when housing was urgently needed. These owners have businesses to operate and are certainly entitled to know what the plans of the Government are with respect to the acquisition of these projects."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The committee struck out $8,332,000 requested for construction of an airfield complex at the new Air Force Academy at Colorado Springs. It reported this was not an urgent item and said it should be postponed for further consideration. Peterson Field, now used by the Air Force, is within 20 miles of the Academy, it was pointed out, and will continue to be available for use until final determinations are made.

Also knocked down was an Air Force request for permission to increase the cost limitation on a house for the Academy Superintendent from $75,000 to $97,500, the committee insisting that the lower figure, which excludes land costs, roads or utilities, was entirely adequate for a house of this nature.

There were these pithy references to Academy construction:

"Some members of the committee are disturbed by what appears to be a lack of concern for cost factors by the Department of the Air Force in planning, constructing and furnishing of the Air Academy. In keeping with the academies of other services the purpose of the Air Force Academy is to train officers. The Academy should be a first-class facility in which the American people can take pride; but it should not be a monument to governmental extravagance. . . .

"Hearings over the past several years will reveal that the Congress and American people were sold an Air Force Academy that was not to exceed the total cost of $126 million. Yet, these previous commitments appear to have been largely ignored by responsible Air Force officials and the Congress is now requested to approve additional millions for this institution."

As the committee reported the bill for House consideration, it provided $1470 million in construction funds, a reduction of $190 million from the budget estimates. A total of $46 million was approved for Army Reserve construction, the committee refusing to approve the Navy's request for $10 million for such building.

ADVANCE PLANNING PROGRAM ENROLLS 250 COMMUNITIES

The Community Facility Administration of the Housing and Home Finance Agency said last month that more than 250 communities were preparing plans for new water and sewer systems, new schools, and other needed public works under the program of advances for public works planning. A number of additions and improvements to existing pub-

(Continued on page 382)

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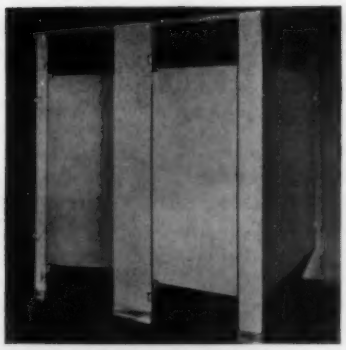

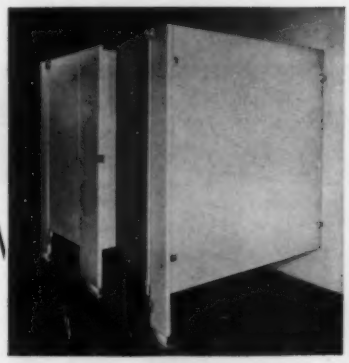

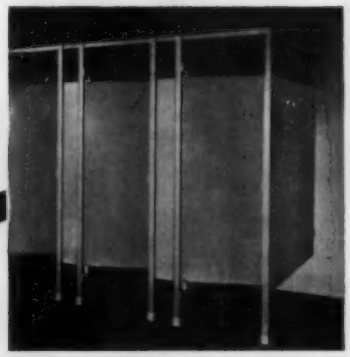

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THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 380)

lic works facilities were having their plans financed in this way as well.

CFA Administrator John C. Hazeltine said the response to the program indicated it was meeting a real and important need for assistance in this type of planning to meet local needs. Approvals through June 30 totaled more than $8 million in planning funds. Total estimated cost of projects in the program was placed at $460 million. Mr. Hazeltine added: "The program of advances may not solve all public works planning problems facing communities and urban areas today. It can, however, provide a number of benefits and act as a stimulant to further public works planning by the localities themselves."

Besides 350 approvals, about 130 additional applications were in the pipeline being processed by regional offices. These, it was said, represented requests for $6 million in planning advances.

Of the 350 approvals at midyear, 170 were for communities of 10,000 population or less, and 95 were for communities between 10,000 and 50,000. This signified that three out of four were for communities under 50,000.

About 46 per cent of the approved applications were for sewers and water facilities, 30 per cent for schools and educational facilities, and the rest for planning public buildings, roads, streets and miscellaneous facilities.

HOUSE GROUP ARGUES FOR SHELTER VS. EVACUATION

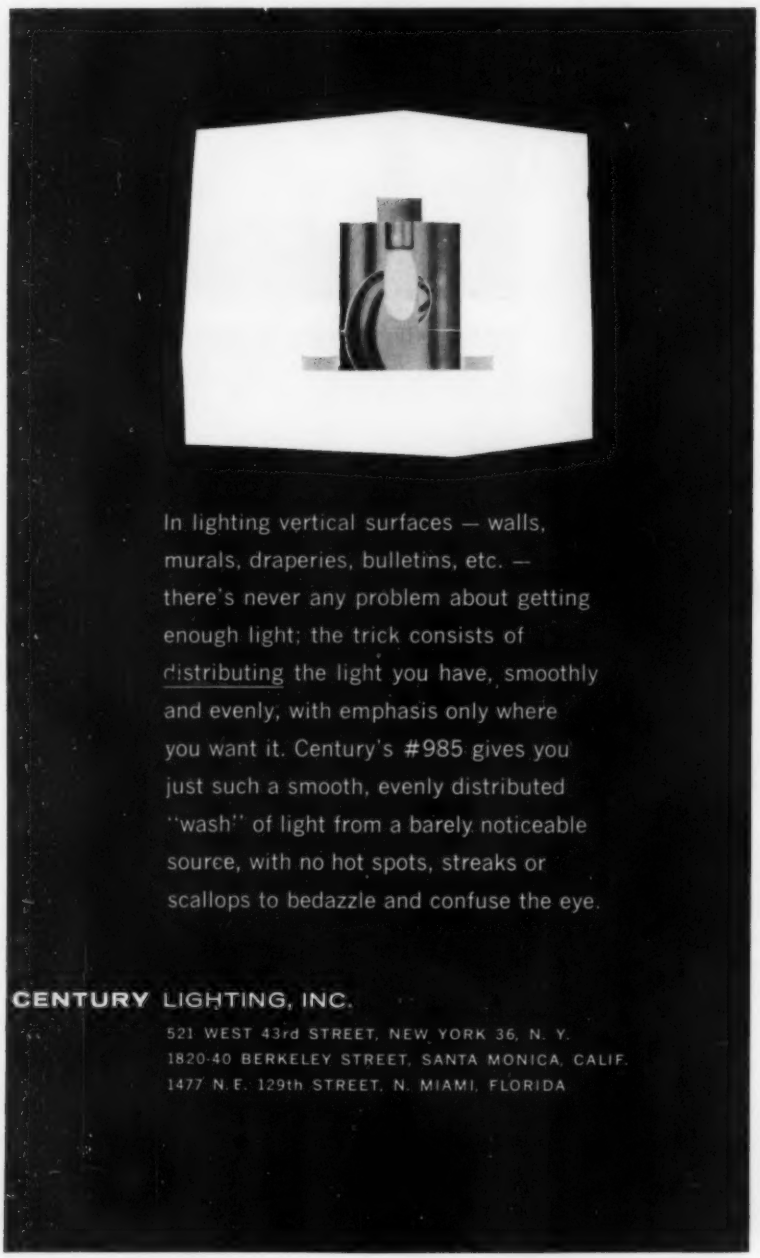
The continuing argument over evacuation versus on-the-spot shelter as favored civil defense measures received a touch of public attention again when the House Committee on Government Operations brought out its eighth report on the status of civil defense legislation. This blasted the Federal government for not having made a start on a multi-billion dollar underground shelter construction program and accused Federal civil defense planners of "vacillation."

The committee's majority report noted that the U. S. Naval Radiological Defense Laboratory had presented the general requirements of a national civil defense countermeasure system. The multi-phase system encompassed immediate survival, emergency operations and long-term recovery.

"The central countermeasure of this system is shelter, around which all other countermeasures must be developed," the report noted. It outlined the Laboratory's proposals to protect 100 million persons in non-target areas with $3 billion worth of fallout shelters. Another 35 million, it was claimed, could be protected from fire storms in more densely populated areas for an outlay of $2.1 billion. The largest cost, $10.5 billion, would be for underground shelters to protect against fire, blast and radiation. To equip these shelters would add another $4 billion, bringing total estimated cost to nearly $20 billion.

The report, based on data gathered through months and months of hearings by the Holifield (D-Calif.)subcommittee, constituted a strong argument for shelter construction as opposed to evacuation.

Minority views issuing concurrently from the committee scoffed at the $20 billion estimate for shelters and said implementation of the plan would cost far in excess of that figure. These dissenters urged that the problem be studied further with respect to relative emphasis on evacuation or shelters in target areas. And this is being done.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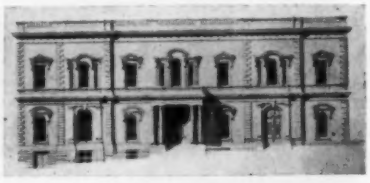
(Continued from page 374)

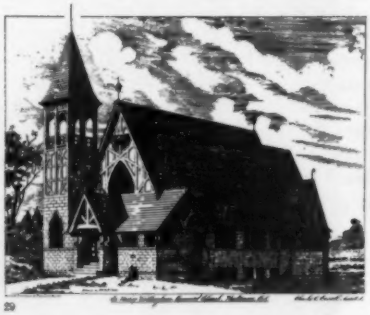
BALTIMORE A.I.A. HONORED BY CENTENNIAL BROCHURE

For the 100th anniversary of the American Institute of Architects, Baltimore's Peale Museum has published "A Century of Baltimore Architecture" to accompany an exhibit showing work of members of the Baltimore chapter. Baltimore architects were early involved in A.I.A. activities, with Edmund George Lind and John Rudolph Niernsee joining the institute in 1857. (All of the architects whose work is shown here, with the exception of Nolting, were early members of the A.I.A.)

(Continued on page 388)

Above: "Alexandroffsky," built 1855, razed 1926; John R. Niernsee and J. Crawford Neilson, architects. Below: study by architect Edmund J. Lind for the enlargement of the Peabody Institute, 1857





Above: Bishop Whittingham Memorial Church, 1882; Charles E. Cassell, architect; the tower was not built

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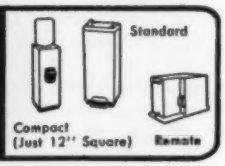

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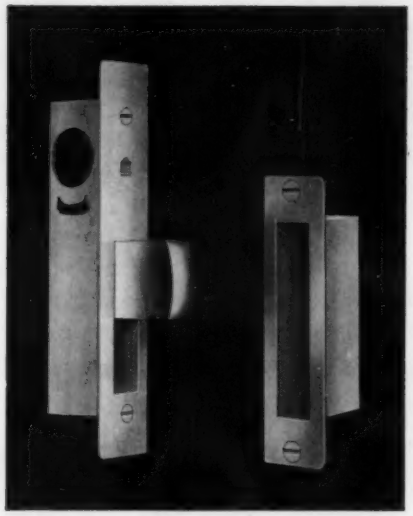

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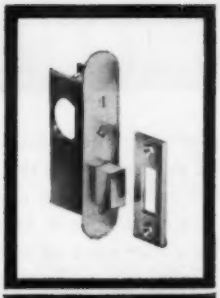

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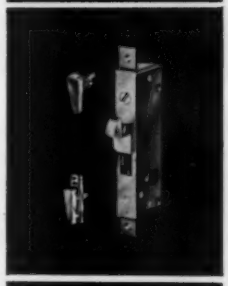

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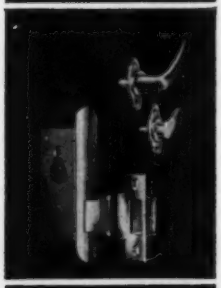

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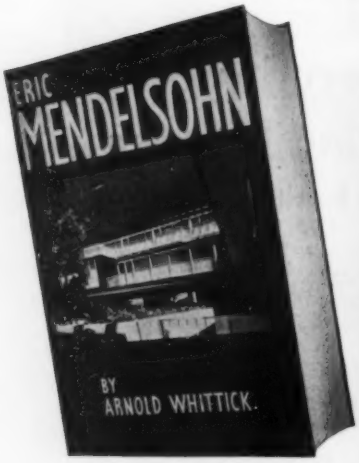

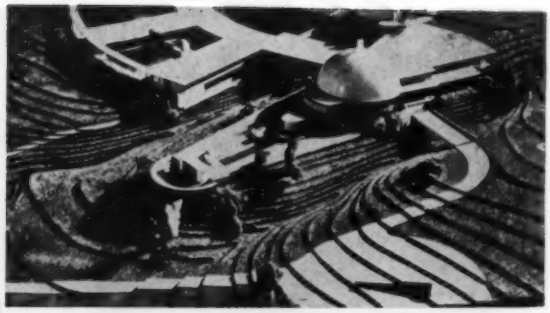

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THE RECORD REPORTS

(Continued from page 384)

The booklet was edited by Wilbur H. Hunter Jr. and Charles H. Elam of the Museum; they were assisted in the selection of buildings by an A.I.A. committee composed of D. K. Este Fisher, Louis McLane Fisher, Francis P. Jencks, John H. Scarff and Alexander S. Cochran, and by Richard H. Howland and Eleanor P. Spencer of the museum. The brochure can be ordered, for $1, from the museum.

Above: Christ Protestant Episcopal Church, 1870; E. Francis Baldwin and Bruce Price, architects

Above: City Hall, 1867–75; G. A. Frederick, architect. Below: Patterson Park High School, 1933, Wyatt & Nolting, architects

(More news on page 392)

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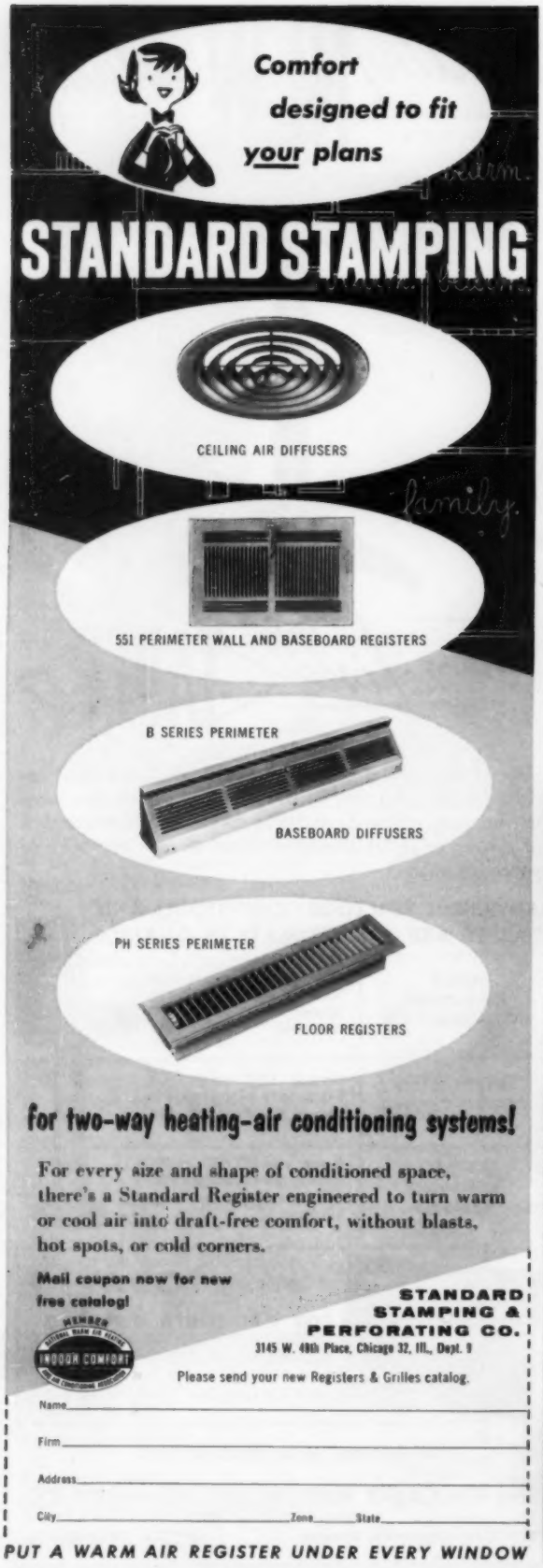
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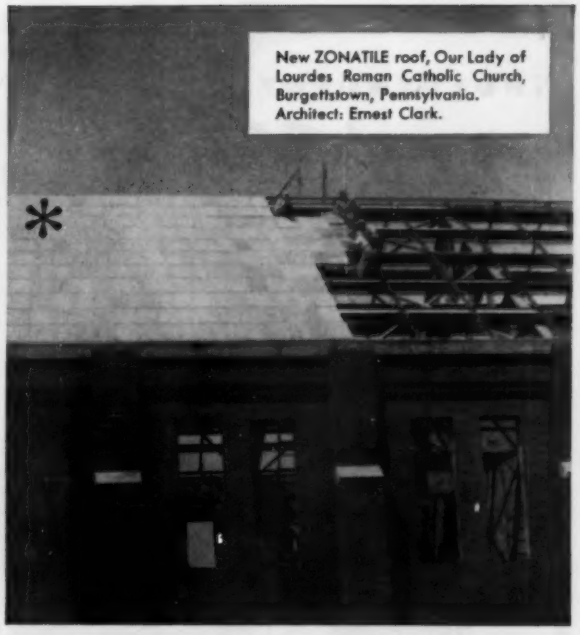

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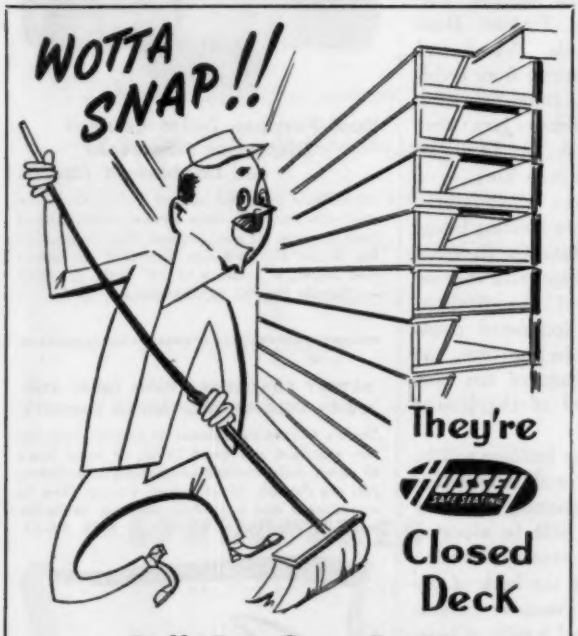

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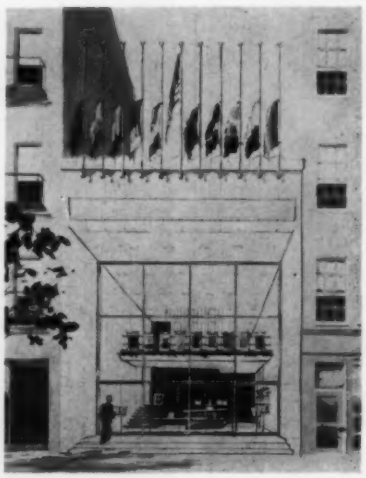
THE RECORD REPORTS

(Continued from page 388)



CAPTIVE NATIONS ASSEMBLY HOLDS DESIGN COMPETITION

In a competition open to only seven invited architects, the Assembly of Captive European Nations selected Antanas J. Varnas, A.I.A., as the designer of its new headquarters in New York. The Assembly, which is composed of representatives from Albania, Bulgaria, Czechoslovakia, Estonia, Hungary, Latvia, Lithuania, Poland and Romania, asked for entries from architects now exiled from those countries. Serving on the two-man jury were Gordon Bunshaft, A.I.A., and Lawrence White, A.I.A., both of New York.

The new headquarters will be located in a remodeled two-story building facing the United Nations Plaza. On the front of the building, a device with moving letters will carry news of "the real situation in Communist dominated countries." Flagpoles, projecting over the sidewalk, will bear flags of the nine member countries and of the United States.

The first floor of the building will be taken up by a lobby, with information facilities, and by the assembly's meeting room; the presidium will be elevated from the floor by four steps, symbolizing the four freedoms. At the back of the platform, flags of the member nations will be displayed behind a grille of bars. A press gallery will be provided at the back of the hall.

The balcony will be used as an exhibition hall, with space for small conferences; the secretariat offices, press room, recording facilities and kitchen will be located in the basement.

(More news on page 396)

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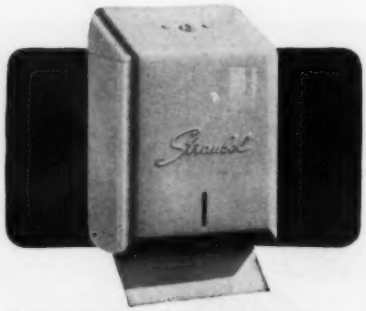

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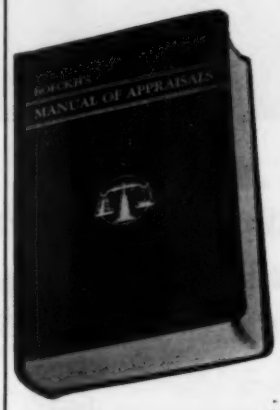

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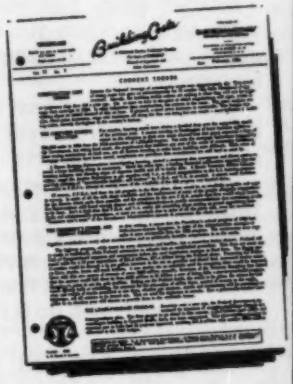

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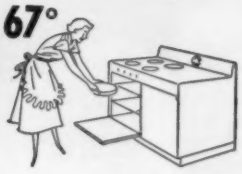

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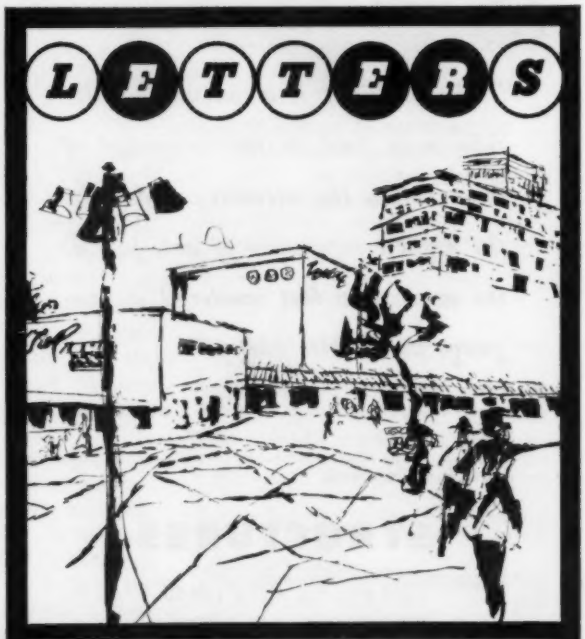

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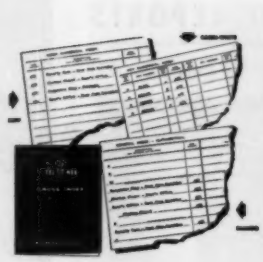

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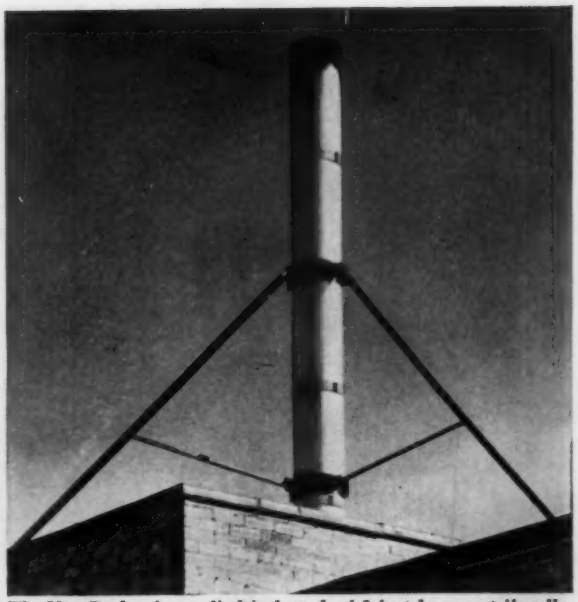

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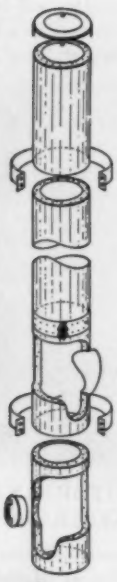

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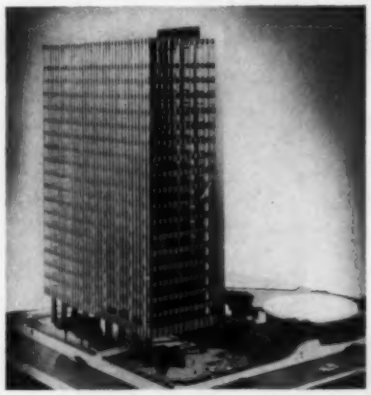
THE RECORD REPORTS

(Continued from page 392)

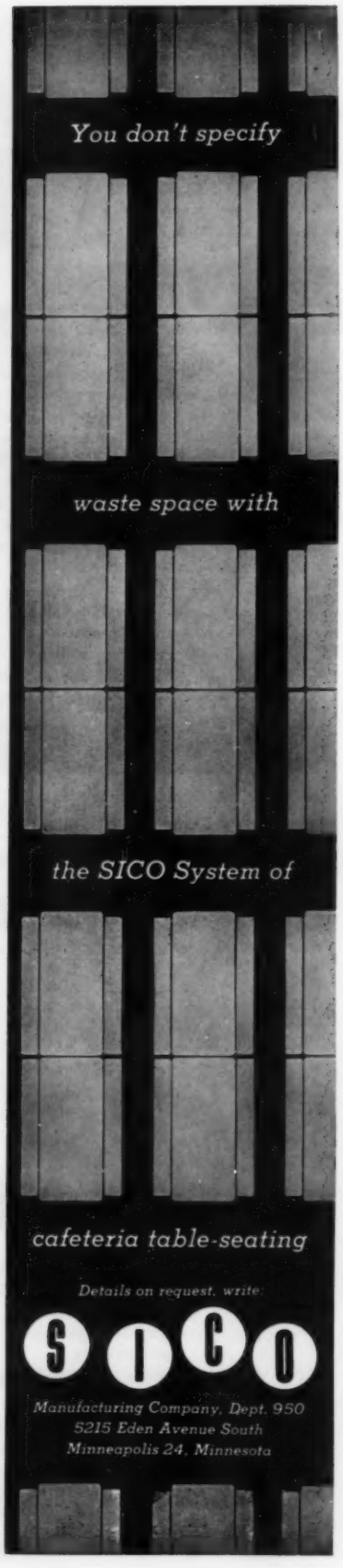
NEW PROJECT FOR CHICAGO: A SKYSCRAPER IN A PLAZA

One of Chicago's largest office buildings, and the first to be built on La-Salle Street in 25 years, is this one to be erected by National Properties Inc. Architects are A. Epstein and Sons. The 26-story building, to provide about 650,000 sq ft of rentable space at an estimated total cost, including site, of $20 million, will be set back 20 ft from the sidewalk in a landscaped area. Skin will be metal and glass.



ALSO FOR SAN FRANCISCO: A SKYSCRAPER IN A PLAZA

Crown Zellerbach's new headquarters building at Market and Bush, Battery and Sansome streets in San Francisco is another "skyscraper" — this one 20 stories — set in a landscaped plaza; here the building takes up only about a third of the site. The steel and glass building will have 230,000 sq ft of usable area, 130,000 of it to be rented. Architects: Hertzka & Knowles and Skidmore, Owings & Merrill.



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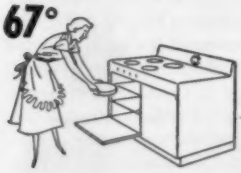

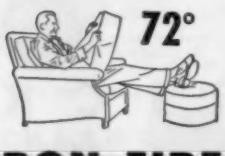

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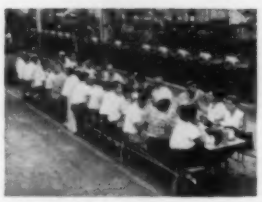

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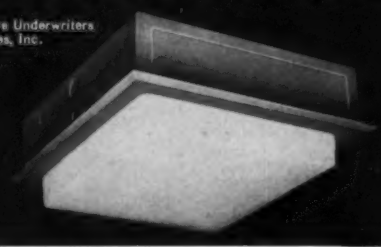

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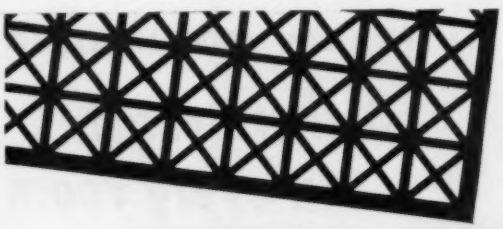

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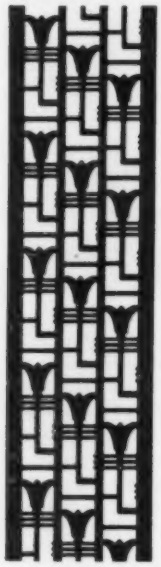

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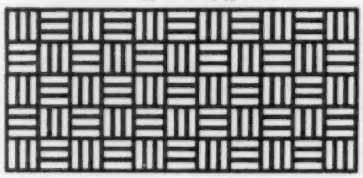

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REQUIRED READING

(Continued from page 62)

After the chapters on Mendelsohn's early life and his practice as a successful architect in Germany, we find a very apt description of the emigrant's new start in England. It follows a chapter on the work done in Israel. This was, again, short-circuited by the political conditions. His university medical center on Mount Scopus in Jerusalem is, perhaps, the most outstanding example of Mendelsohn's ability to think in terms of large building complexes.

In the two chapters devoted to Mendelsohn's work in America, his synagogues are well documented. This swan song became undoubtedly an unforgettable expression of a beautiful soul.

If Mendelsohn has shown us one thing, it is that we cannot do without beauty no matter whether we build factories or houses of worship. There is no space here to discuss the last two chapters and the documentary appendices dealing with Mendelsohn's position as an artist, philosopher and writer. This reviewer finds these chapters required reading for anybody who takes seriously his interest in architecture. There is only one regret. In a monographic study we should have the benefit of full length reproduction of at least some of his letters. Although there are a great number of brief quotations we like to look over Mr. Whittick's shoulders in front of him. Also, we would like to hear more of Mendelsohn's collaborators who must share in the glory and of his students who were influenced by him. The dissertation on aesthetics at the end of the volume would have merited a special publication but is crowding out Mendelsohn's own utterances to which this chapter was devoted.

Yet, this book is another monument to Mendelsohn's greatness and unshakeable artistic integrity. This reviewer was made somewhat melancholic when reading the warm-hearted account of a fateful life of one of the greatest Twentieth Century architects. Mendelsohn was an outstanding prototype of the many architects who were strewn all over the globe because of man's insane political behavior. We have to thank Mr. Whittick for lifting our hearts with his ability to present the quiet heroism of the great artist. No architectural library is complete without this book, which was written in the right devotional spirit.

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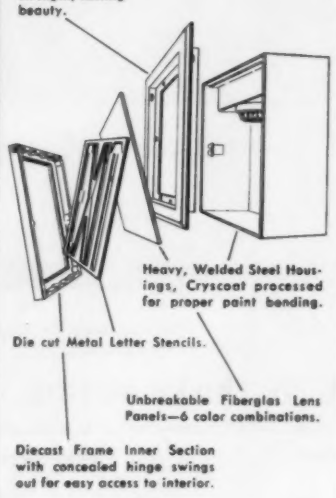
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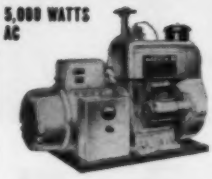

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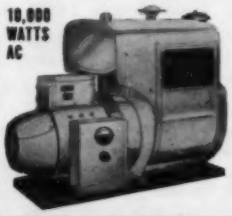

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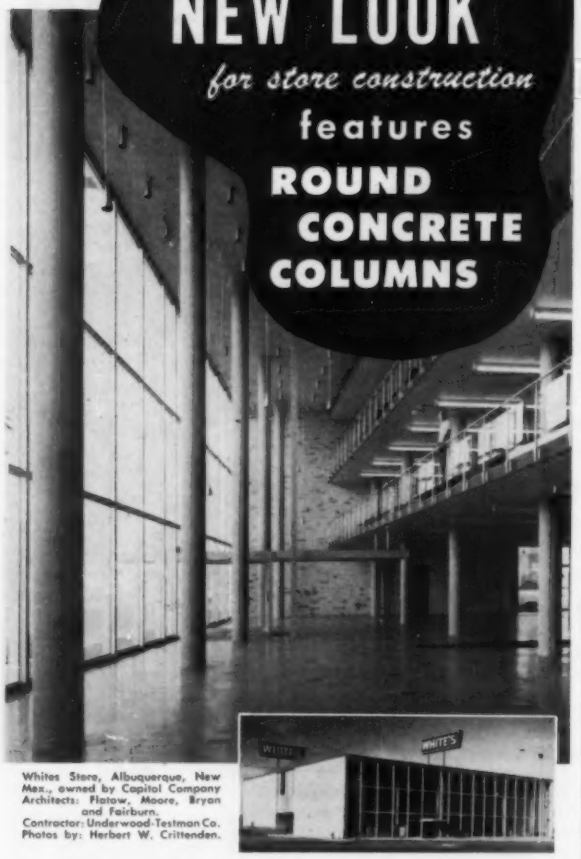

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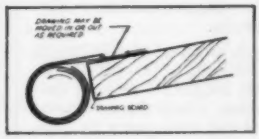

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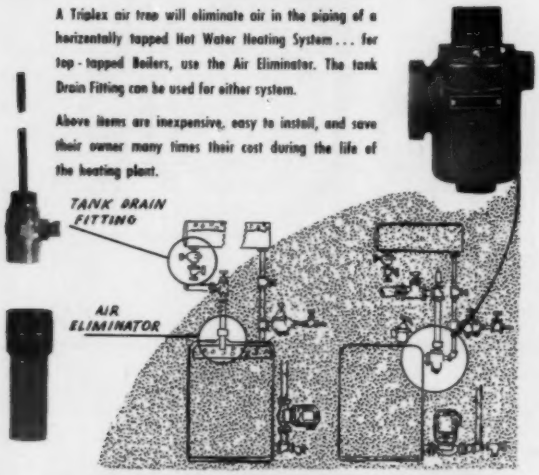

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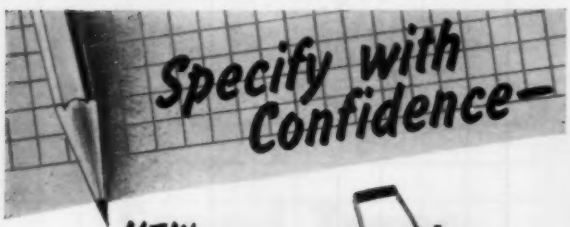

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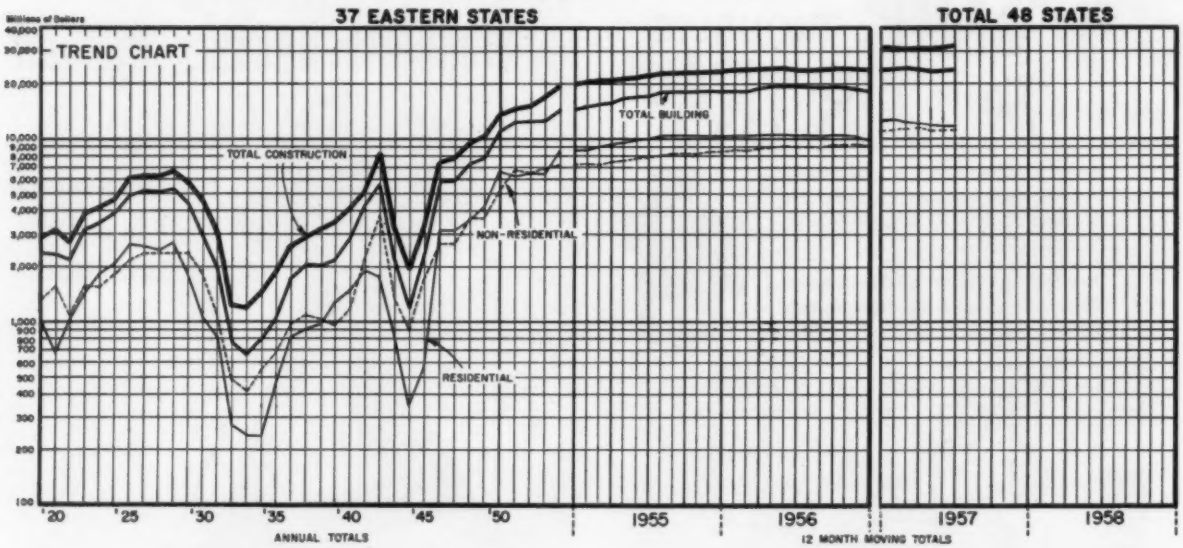

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Source: F. W. Dodge Corporation

TOTAL CONSTRUCTION

Construction Contracts—Regional Comparison

Valuation (in $ thousands)

Region	6 mos. 1957	6 mos. 1956	% change
I (Boston District)	850,503	944,261	−10
II (Buffalo, N. Y. C., Phila.)	3,476,124	3,269,884	+ 6
III (Atlanta, Birmingham)	1,689,113	1,510,742	+12
IV (Cinti., Cleve., Pittsbgh.)	1,577,932	1,671,644	− 6
V (Chi., Detroit, Mpls.)	3,053,427	2,903,197	+ 5
VI (N. Orleans, St. Louis)	1,008,353	1,010,902	0
VII (Dallas, Kans. City)	1,536,879	1,482,030	+ 4
VIII (11 Western States)	3,765,674	3,400,568	+11
48 States Total	16,958,005	16,193,228	+ 5

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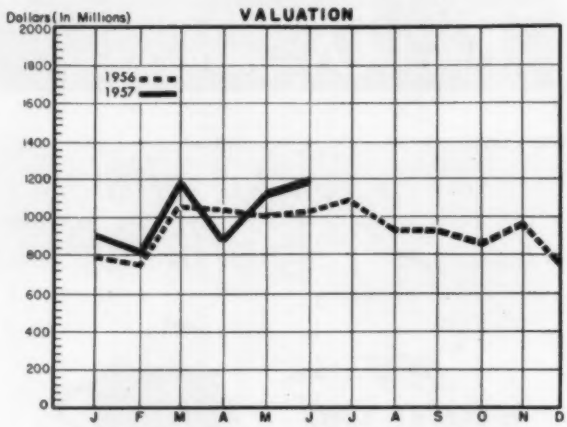

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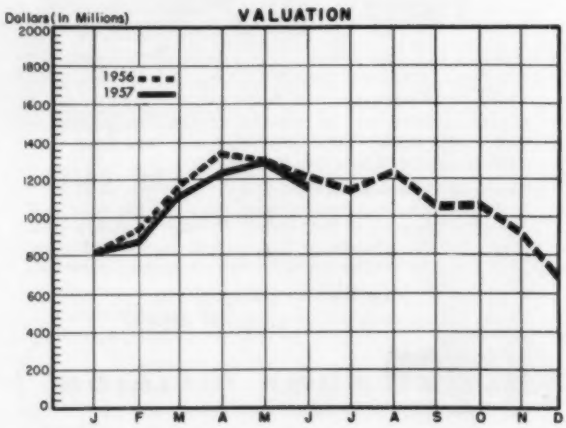

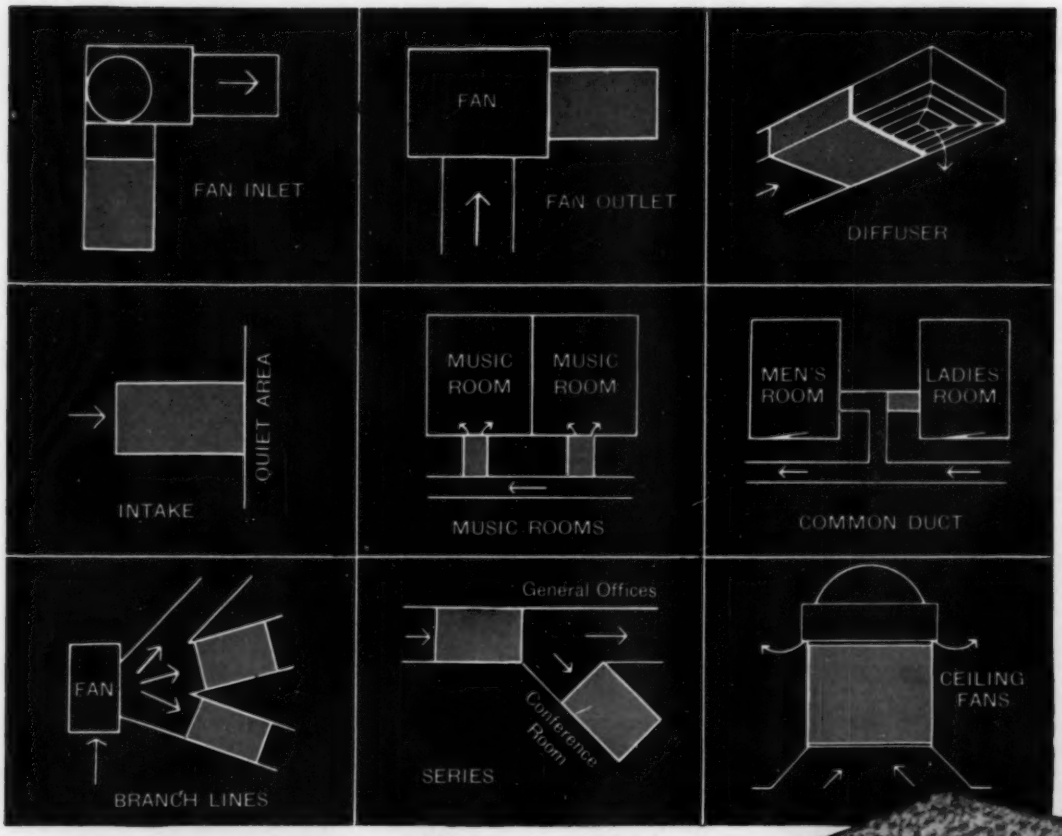

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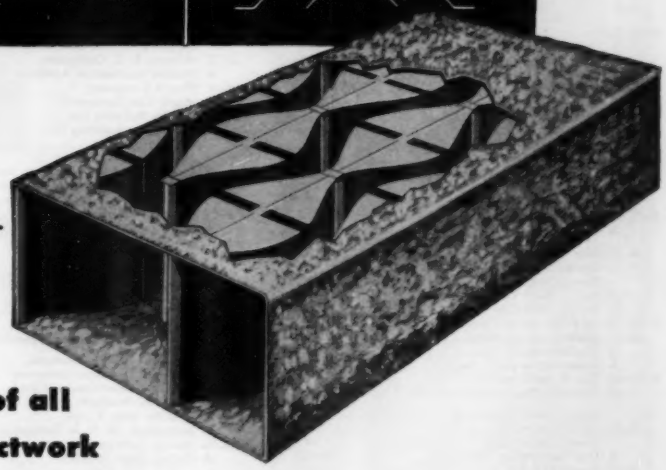

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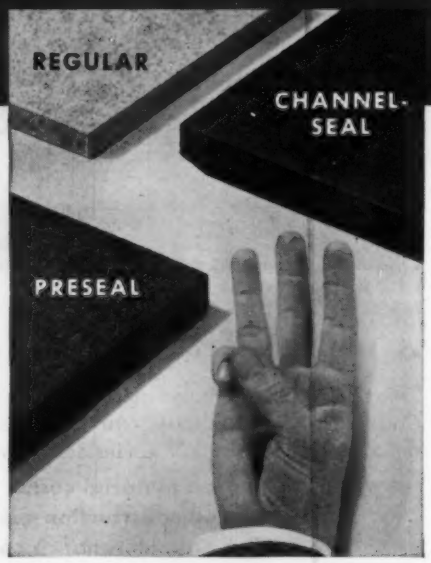

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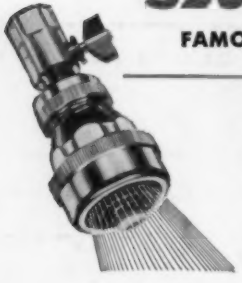

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